

# Peabody Terrace Façade Project - PCB Remediation Plan Modification

## Buildings E, F, & Y

Harvard University  
Cambridge,  
Massachusetts



**1.866.702.6371**  
**35 New England Business Center**  
**Andover, MA**

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## 1. INTRODUCTION

Woodard & Curran has prepared this Remediation Plan Modification (Plan) request on behalf of President and Fellows of Harvard College (Harvard) in accordance with Conditions 1a and 17 of the United States Environmental Protection Agency's (EPA) April 15, 2010 Risk-Based PCB Cleanup and Disposal Approval under 40 CFR 761.61(c) and 761.79(h) (the Approval) for the Peabody Terrace Housing Complex (the Site) located at 900 Memorial Drive in Cambridge, Massachusetts (Figure 1-1). This Plan details the proposed remedial approach for polychlorinated biphenyl (PCB) bulk product waste (original caulking) and PCB remediation waste (replacement caulking and impacted building materials) present at Buildings E, F, and Y.

The PCB remediation work is being incorporated into an overall exterior façade repair and weatherproofing project being conducted at the Site over a three-year period. The overall exterior façade project began in 2010 with Buildings A, B, C, and X, which is nearly complete as of the date of this Plan. At this time, the projected schedule for completing the exterior façade work is as follows:

- 2011: Buildings A, B, C, and X (remaining work items detailed in the Building A, B, C, X Status Report)
- 2011: Buildings E, F, and Y
- 2012: Buildings D and Z

A Site Plan depicting the buildings and ground surface coverings at the Site is provided as Figure 1-2.

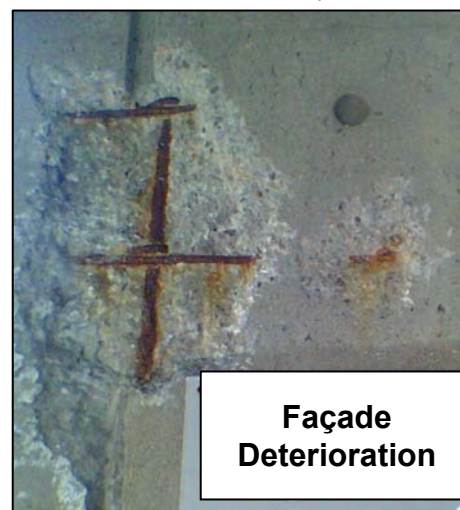
### 1.1 BACKGROUND

The Peabody Terrace housing complex, originally constructed in 1964, consists of three high-rise towers (Buildings X, Y, and Z; 22 stories each) and six lower rise buildings (Buildings A, B, C, D, E, and F; 3-7 stories each). The buildings are currently used for Harvard graduate student housing and contain a total of 492 apartments. Peabody Terrace also features several on-site childcare facilities, laundry rooms, common rooms, and outdoor play areas.

Certain portions of Peabody Terrace exterior concrete façades and balconies are in various stages of disrepair, including cracking, spalling, and other deteriorating conditions given the age of the buildings and other contributing factors (e.g., construction details). Harvard has been planning an extensive exterior façade repair and rehabilitation project to address these conditions, which includes replacing damaged concrete, removing and replacing exterior building caulking, and applying an exterior façade waterproofing system. The implementation of the exterior façade repair project has been segmented into three, one-year construction phases due to the number of buildings involved.

As described in the Building A Plan, Building A was used as the model to develop an understanding of the nature and extent of PCBs in caulking and in adjacent materials. The initial Building A results collected in 2009 indicated that percent level concentrations of PCBs (up to 139,000 parts per million [ppm] total PCBs) were detected in samples of original exterior caulking. At that time, Harvard re-focused their efforts (i.e., collected samples from locations besides Building A) to ensure that tenants or users of Peabody Terrace were not subject to unsafe conditions based on the presence of PCBs in the exterior caulking.

Site-wide characterization samples were collected and evaluated at exterior locations with higher exposure potential and likely PCB transport pathways (i.e., designated play areas and lawns adjacent to building façades), on-site



daycares and interior common rooms, apartment unit interiors, and these apartments' exterior patios and balconies. After confirming that conditions were stable in these high exposure potential areas, additional Building A characterization sampling activities, as well as characterization of Buildings B, C, and X, were conducted through 2010 in support of developing remediation plans that were implemented in 2010 with the original façade renovation project for these buildings. As described previously, façade renovation / repair of the next set of buildings (Buildings E, F, and Y) is scheduled for 2011. To support this work, a plan modification has been prepared (this plan) and includes characterization sampling which was conducted in the fall of 2010 at Buildings E, F, and Y.

## **1.2 CONCEPTUAL SITE MODEL**

The Building A data set indicated that percent level concentrations of PCBs were present in original exterior building caulking. Lower concentrations of PCBs in exceedance of the unrestricted use cleanup level were also detected in adjacent building concrete (vertical façades and horizontal balcony surfaces), unpaved adjacent ground surfaces (landscaped areas and soil), and a 1990's replacement caulking (interior and exterior caulking) via various migration and transport pathways.

Overall, the PCB characterization data collected from Building E, F, and Y caulking and adjacent materials was consistent with the Building A data, and the Building A model described above is generally applicable to Buildings E, F, and Y. Any exceptions to this model associated with certain construction features unique to Buildings E, F, or Y are described in this Plan.

## **1.3 PREVIOUS SUBMITTALS AND APPROVALS**

Since submitting the PCB Remediation Plan for Building A on February 16, 2010, the following addendums and modifications have been submitted to EPA. The Notification consists of the following information submitted on behalf of Harvard to satisfy the notification requirements under 40 CFR 761.61(c), 761.62, and 761.79(h):

- Buildings B, C, X Plan (April 6, 2010) and e-mail clarification (April 9, 2010);
  - Supporting information for Building A, B, C, X work: certifications (April 29, 2010), contractor workplan (May 13, 2010), and responses to contractor workplan comments (June 2, 2010);
- Modification Request No. 1 – Powerwashing (July 20, 2010);
- Modification Request No. 2 – Soil Remediation – Buildings A, B, and C (November 11, 2010); and
- Modification Request No. 3 – Patio coatings (November 11, 2010 with revision on November 18, 2010).

Each of these submittals has been approved for inclusion under the April 15, 2010 Approval as of the date of this Plan.

## **1.4 PLAN ORGANIZATION**

This Remediation Plan is organized into the following sections:

### **Section 2: Site Characterization**

In support of this plan, characterization sampling activities were conducted at Buildings E, F, and Y from September 2010 to November 2010. This section of the report outlines the nature and extent of PCBs in each media as supported by this characterization data.

### **Section 3: Data Usability Assessment**

The data usability section of this report focuses on the precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) parameters as well as an assessment of quality assurance / quality control (QA/QC) samples as they affect the usability of the data collected from Buildings E, F, and Y.

### **Section 4: Remediation Plan**

The remediation plan section includes a discussion of the remedial objectives and cleanup levels, the remediation approach for each PCB-affected media, a proposed sequence of activities, and a verification sampling approach. This remediation plan has been prepared according to the requirements for a 40 CFR 761.61(c) risk-based disposal request for the cleanup, disposal, and/or encapsulation of PCB remediation waste at the Site.

### **Section 5: Communications**

This section describes the communications between Harvard and the parties at Peabody Terrace affected by current conditions and upcoming work, including residents, employees, and contractors.

### **Section 6: Schedule**

This section outlines a general sequence of the proposed remedial activities.

## **2. SITE CHARACTERIZATION – BUILDINGS E, F, & Y**

This section provides a discussion of the unique building features as well as the nature and extent of PCB-affected media encountered at Buildings E, F, and Y. Characterization samples were collected from exterior façade building materials (caulking and concrete), interior surfaces (bulk and wipe samples of various media), and indoor air. The PCB-affected media are identified and described with cross-references to analytical data summary tables. Photographs of each façade of Buildings E, F, and Y are provided in Appendix A.

### **2.1 UNIQUE BUILDING FEATURES**

In general, Buildings E, F, and Y are similar in construction to Buildings A, B, C, and X. Buildings E and F are connected in an “L” shape similar to Buildings B and C, and two enclosed hallways form a catwalk between Buildings F and Y similar to Buildings C and X. However, three building features at Buildings E, F, and Y (described below) have not been encountered during the first phase of work at Buildings A, B, C and X. In addition, three designated exterior play areas located in the vicinity of Buildings E, F, and Y are also described below.

#### **2.1.1 Building E Common Room**

The ground floor space in the northern end of Building E is designated as a common room area available to all Peabody Terrace residents. The space includes one large open room, a supporting kitchenette area, two restrooms, and a study area. The common room is typically used for meetings or other functions. The eastern entrance to the common room is similar to a typical building lobby entrance, and three western entrances to the common room (two single doors and one double door) open to a brick patio area. The window construction in this room is different than those of the residential units observed in Buildings A, B, C, and X. Interior caulking was observed to be present at joints between metal window/door frames and concrete masonry walls as well as at other window features (sills and frames). The interior caulking in the common room is off-white in color and appears to be a different material than the white replacement caulking observed at interior locations within residential units.

As presented in Appendix A of the Building A Remediation Plan, samples were collected from surfaces inside the common room (coded as “CR01”) in September 2009. Surface wipe samples were collected from interior caulking, interior surfaces adjacent to caulking, lower walls, and floors at each of three selected locations. Samples collected from adjacent surfaces were non-detect for PCBs in 8 out of 8 samples, as PCBs were not reported above the laboratory’s minimum reporting limit of 0.5 micrograms per 100 square centimeters (ug/100cm<sup>2</sup>). The caulking wipe data was non-detect for PCBs in three samples, and was reported at 3.3 ug/100cm<sup>2</sup> in the fourth sample from a window behind a fixed table in the kitchenette. The 2009 assessment indicated that although low levels of PCBs were present in one sample, they are not likely to be available for direct contact exposures given the low concentrations, intact nature of the caulking (i.e., not brittle or deteriorating), and the restricted access to the location.

To determine whether any interior caulking in the Building E Common Room contained PCBs at detectable concentrations in bulk samples (to be included in the caulking removal during this phase of work), the following three characterization samples were collected from interior caulking on January 31, 2011:

- One caulking sample from a horizontal window frame to radiator surface joint (metal : metal);
- One caulking sample from a vertical window frame to wall joint (metal : concrete); and
- One caulking sample from the vertical window joint in the kitchenette previously reported with PCBs at 3.3 ug/100cm<sup>2</sup> in a surface wipe sample (metal : concrete).

The results of these samples were reported as non-detect for PCBs at all three locations, as PCBs were not detected above the laboratory's minimum reporting limit of 0.300 ppm as summarized in Table 2-1. As a result and because it is not part of the current planned work of the exterior façade project, interior caulking removal will not be conducted inside the Building E Common Room.

### **2.1.2 Building F Child Care**

The Peabody Terrace Children's Center (PTCC) is a child care center that operates from 8:15 am to 5:45 pm daily, and cares for children between 3 months and 5 years of age. The child care center in Building F covers the majority of the ground floor and contains three classrooms identified as Infant South, Toddler One South, and Toddler Two South. Given potential access limitations and disruptions to the Building during the upcoming exterior façade work at Building F, the PTCC program will be relocated to a temporary modular facility located in the lawn area west of Building E for the duration of the work at the building.

During an inspection of the Building F Child Care rooms, interior caulking was observed to be present at joints between metal window/door frames and concrete masonry walls, as well as at other window features (sills and frames). This caulking is off-white in color and appears to be a different material than the interior caulking observed inside residential apartment units. In addition, two unique caulked joints were observed at an interior concrete to concrete wall expansion joint and one ceiling to wall panel joint. Both of these caulked joints were painted and the caulking and construction at these two joints appears to be similar to the exterior concrete wall joint construction and configuration. Based on discussions with Harvard Peabody Terrace staff, this area was once an open area at the ground floor and used for outside storage and use (e.g., bike racks, etc.). In the early 1990's, the space was converted to the child care center.

As presented in Appendix A of the Building A Remediation Plan, samples were collected from surfaces inside the child care center (coded as "DC03") in September 2009. Surface wipe samples were collected from interior caulking, interior surfaces adjacent to caulking, lower walls, and floors. Adjacent surface samples were non-detect for PCBs in 15 out of 15 samples ( $< 0.5 \text{ ug}/100\text{cm}^2$ ). The caulking wipe data was non-detect for PCBs in seven samples, and was reported at 1.7 and 4.3  $\text{ug}/100\text{cm}^2$  in two samples collected from the unique caulked joints not present at a window/door frames. These two caulking materials, located in a concrete wall expansion joint near the northern entrance and a ceiling to wall joint along the western wall, were both painted on the surface and appeared to consist of a caulking more similar to exterior caulking as opposed to the typical interior white replacement caulking. The 2009 assessment indicated that although low levels of PCBs were present in two samples, they are not likely to be available for direct contact exposures to children using the daycare facilities given the low concentrations and that the caulking was painted and intact (i.e., not brittle or deteriorating). However, given the materials' similar appearance to exterior caulking, the wipe results, and the use of this space for child care, the caulking will be removed and replaced while the child care facility is vacated during the 2011 construction season as described in Section 4.15.2.

To determine whether any other interior caulking in the Building F Child Care contained PCBs at detectable concentrations in bulk samples (to be included in the caulking removal during this phase of work), the following three characterization samples were collected from interior caulking on January 31, 2011:

- One caulking sample from a vertical window joint (metal : concrete);
- One caulking sample from a horizontal joint of an operable window (metal : metal); and
- One caulking sample from a vertical door joint (metal : metal).

The analytical results were reported with PCBs below laboratory reporting limits in one sample (< 0.330 ppm) and at 19.0 ppm and 34.2 ppm in the other two samples. These results are summarized in Table 2-1.

The sample with PCBs at 19.0 ppm (PTF-CBK-DC03-1138) was collected from a horizontal seam beneath an operable window along the south wall. Joints of this type are present at metal to metal joints around the perimeter of each operable window. Based on a review of site figures, there are approximately 10 of these windows present in the facility.

The sample with PCBs at 34.2 ppm (PTF-CBK-DC03-1139) was collected from a vertical caulking joint at the northernmost door on the eastern wall in the westernmost room. Joints of this type are present at metal to metal joints around the perimeter of each door of similar construction. Based on a review of site figures, there are approximately 5 of these doors present in the facility.

Although PCBs were detected below 50 ppm and records indicate that the windows were installed in the early 1990s, removal of the caulking at joint types where samples were reported with PCBs above 1 ppm will be performed while the child care facility is vacated during the 2011 construction season as described in Section 4.15.2.

### 2.1.3 Patios and Doorsteps

Ground-level concrete patios associated with a particular residential unit (as seen on the west face of Building A) are present along the western face of Building E outside each of the eight ground-floor units. Concrete doorstep pads, approximately 4.5 by 4.5 ft, are present outside south-facing ground-floor units of Building F (2 unit entries and 4 daycare entries) and Building Y (3 unit entries).

For the purposes of this Plan, patios are defined as the ground-level concrete pads outside a residential apartment unit, where the patio is accessible from a private entry and opens to a fenced yard. The concrete pads are flush with the surrounding ground surface, extend out approximately 7 feet from the building façade, and vary in width depending on the width of the unit or adjacent units with patios (see photo at right).



The type of caulking observed at the patio slab to wall joint of Buildings A and B appeared to be a new, intact gray replacement caulking, with PCB concentrations reported at 27.8, 64.9, and 50.8 ppm. The caulking at this joint on the Building E patios appears to be different from the Building A and B caulking, and was reported with a PCB concentration of 1,257 ppm at the one Building E location sampled.

In contrast, the concrete doorsteps outside ground-level private entries at the other two buildings appear to be a different type of construction from the patios. Ground-level units in Building Y south (3 entries) and Building F south (2 unit entries and 4 daycare entries) contain a small concrete pad elevated above the surrounding ground surface, and measure approximately 4.5 by 4.5 feet. These pads are sometimes finished with a stair leading to an asphalt



sidewalk present behind each of these three buildings (see photos below). The open space beyond these doorsteps are limited in area and are not considered yards like the areas present at Buildings A, B, and E. The dark brown caulking observed at the joint between the concrete doorstep slab and the vertical building face appears to be fairly old with a fibrous and rough texture, and was reported with PCB concentrations of 737 ppm (Building F) and 1,040 ppm (Building Y) at the two locations sampled.



#### 2.1.4 Exterior Play Areas

Three designated exterior play areas are located in the vicinity of Buildings E, F, and Y.

Play Area 3, also known as the Tot Lot, is a fenced area located south of Building Y and east of Buildings E/F. This area is mostly grass-covered with a large sand play area and some playground equipment. It is currently anticipated that tenant access to this play area will be suspended during the façade work on Buildings E, F, and Y.

Play Area 4 is a fenced area located west of Building E and north of Building F. This area is covered mostly with an artificial/rubberized play surface, with small portions covered in asphalt or sand as shown on Figure 1-2. It is currently anticipated that tenant access to this play area will remain open during façade work on Buildings E, F, and Y.

Play Area 5 is a large fenced area located west of the north end of Building E. This area is covered almost entirely with grass except for a small sand box as shown on Figure 1-2. It is currently anticipated that tenant access to this play area will remain open throughout the façade work on Buildings E, F, and Y.

As presented in Appendix A of the Building A Remediation Plan, samples were collected from bulk media and surfaces within the play areas (coded as “PA03,” “PA04,” and “PA05”) in September 2009. The bulk media results were reported with PCB concentrations ranging from non-detect up to 0.417 ppm (10 samples) and one surface wipe sample (rubber mat in Play Area 4) was reported as non-detect for PCBs ( $< 0.5 \text{ ug}/100\text{cm}^2$ ).

## 2.2 CHARACTERIZATION SAMPLE SUMMARY

From September 2010 to February 2011, Woodard & Curran collected a total of 7 air samples, 32 primary bulk samples, and 15 primary wipe samples from interior and exterior surfaces associated with Buildings E, F, and Y<sup>1</sup>. In order to compare the data to Buildings A, B, C, and X results, the sampling plan was developed to replicate the distribution and the selected media of the Buildings A, B, C, and X samples to the greatest extent possible; however, given the similarities between the buildings and the results amongst the previous buildings, a reduced sampling frequency was implemented.

For discussion purposes, these samples have been separated into two main categories:

- Residential unit characterization samples (includes any interior media within a unit, and any exterior media accessible from a patio or balcony):
  - Exterior balcony caulking (8 bulk samples)
  - Exterior balcony concrete (5 bulk samples)
  - Exterior patio/doorstep caulking (5 bulk samples)
  - Exterior patio/doorstep concrete (3 bulk samples)
  - Interior caulking (6 wipe samples and 3 bulk samples)
  - Interior adjacent surfaces (9 wipe samples)
  - Indoor air (6 samples) and outdoor air (1 background sample)
- Façade characterization samples (includes any media not associated with a particular residential unit):
  - Exterior panel caulking (2 bulk samples, plus additional panel caulking collected at balcony walls)
  - Concrete (6 bulk samples)

Summaries of the analytical results are provided in Table 2-2 (balcony level characterization data), Table 2-3 (patio level characterization data), Table 2-4 (residential unit interior characterization data), Table 2-5 (indoor air characterization data), and Table 2-6 (façade characterization data). Figures depicting the exterior characterization sample locations are included as Figure 2-1 (Building Y North and South Elevations), Figure 2-2 (Building Y East and West Elevations), Figure 2-3 (Building E), and Figure 2-4 (Building F).

In addition to the primary samples described above, five QA/QC samples were collected for data validation purposes, including two field blanks and three duplicate samples.

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<sup>1</sup> Please note that the data presented in this section excludes the data collected from the Building E Common Room, the Building F Child Care, and the Exterior Play Areas presented in Section 2.1.



## **2.2.1 Sample Collection Methods**

Caulking samples were collected by cutting and scraping the caulking from the joint with hand tools. If adjacent media (e.g., concrete or a foam backer rod) was inadvertently removed in the process of sample collection, this media was physically removed from the caulking before the sample was placed in its sample container.

Concrete sampling on horizontal and vertical surfaces (panels, columns, or slabs) was conducted using a hammer drill. Holes were made into the concrete to a depth of 0.5 inches and spanned a length necessary to achieve the required sample volume. After the holes were made, the bulk material was scooped from the surface using hand tools and placed in the appropriate sample containers.

Wipe samples were collected in accordance with the standard wipe test as defined in 40 CFR 761.123. All samples were collected from the prescribed 100 cm<sup>2</sup> area using a laboratory-prepared gauze pad. While the standard wipe test prescribes the use of hexane-preserved gauze pads for collecting wipe samples from non-porous surfaces, some samples collected from interior porous surfaces (e.g., caulking) were collected using saline-preserved wipes in addition to the standard hexane wipes.

Indoor air and background outdoor air samples were collected for PCB analysis in accordance with USEPA Compendium Method TO-10A guidelines. A low volume polyurethane foam (PUF) cartridge was connected to a low-flow personal air pump with flexible tubing positioned between 3 and 5 feet above the floor. To achieve the desired minimum laboratory reporting limit of 5 nanograms per cartridge, samples were collected at a flow rate of 2.5 liters per minute for two hours (300 liter sample volume). At the end of the required sample interval, pumps were shut off and the labeled cartridges were wrapped in aluminum foil and placed on ice for delivery to the analytical laboratory.

## **2.2.2 Laboratory Analysis**

All bulk and surface wipe samples were logged on standard Chain-of-Custody (COC) forms and stored on ice for delivery to Analytics Environmental Laboratory of Portsmouth, New Hampshire. Samples were extracted using USEPA Method 3540C (Soxhlet Extraction) and analyzed for PCBs using USEPA Method 8082.

All indoor and outdoor air samples were logged on standard COC forms and stored on ice for delivery to Alpha Analytical Laboratory in Mansfield, Massachusetts. Air samples were extracted and analyzed in accordance with USEPA Compendium Method TO-10A guidelines for laboratory analysis of PCB homologs in air samples.

The complete laboratory analytical reports for the characterization data are provided in Appendix B.

## **2.3 SAMPLE RESULTS – RESIDENTIAL UNITS**

This section includes a description of the samples collected from Building E, F, and Y interior and exterior locations associated with residential units, including exterior caulking and concrete accessible from patios or balconies, interior caulking and adjacent surfaces accessible from inside a unit, and indoor air. The results of these samples are presented in the context of the Buildings A, B, C, and X data.

Given accessibility limitations into occupied units, the majority of the samples were collected from each of three units:

- Building E: Unit 25-32 (one-room studio)
- Building F: Unit 24-517 (one-bedroom unit)
- Building Y: Unit 24-1604 (one-bedroom unit)

In general, the interior and exterior construction and caulking materials used at Buildings E, F, and Y were observed to be similar to Buildings A, B, C, and X construction materials. While the interior floor plans of many of these apartments were different from Buildings A, B, C, and X interiors, the building components most relevant to this investigation (i.e., the windows and doors) were of similar construction to the analogous components in other buildings. The exterior balconies of Buildings E, F and Y were also observed to be similar to Buildings A, B, C, and X, where upper-floor balconies consist of original concrete and caulking. Refer to Section 2.1 for a discussion of any construction features unique to Buildings E, F, and Y.

### **2.3.1 Balconies – Upper Floors**

Balconies are present on the west façade of Building E and the south façades of Buildings F and Y. Building E has 28 single-width and 18 double-width balconies (approximately 3,170 ft<sup>2</sup> total area), Building F has 12 single-width and 10 double-width balconies (approximately 1,585 ft<sup>2</sup> total area), and Building Y has 42 single-width and 24 double-width balconies (approximately 4,455 ft<sup>2</sup> total area). Each single-width balcony measures approximately 50 ft<sup>2</sup>, and each double-width balcony measures approximately 100 ft<sup>2</sup>. Caulking and concrete samples were collected from balconies outside each of the three units in Buildings E, F, and Y (refer to Table 2-2).

#### **Balcony Caulking**

Balcony caulking samples were collected from three types of joints: joints around a window or door frame (white replacement caulking), façade wall panel joints (black original caulking), and joints at the horizontal slab to wall intersection (black original caulking). In general, each of these joints contained materials observed to be similar to their analogous joints on the balcony sampled at the other buildings.

The results of the three white replacement caulking samples collected from the balcony window/door joints were reported with PCBs concentrations ranging from 181 to 367 ppm, with an average concentration of 256 ppm. These results are slightly higher than the other building exterior window caulking samples, which were reported with an average concentration of 41 ppm. The results of two caulking samples collected from wall panel joints accessible from the balcony were reported with concentrations at 257 and 1,210 ppm; these levels are within the range of the exterior wall panel caulking concentrations at Buildings A, B, C, and X which ranged from 60 to 176,000 ppm. The results of the caulking samples collected from horizontal slab joints were reported with concentrations ranging from 3,420 to 130,000 ppm, compared to the Buildings A, B, C, and X slab joint caulking results which ranged from 2,990 to 139,000 ppm.

#### **Balcony Concrete**

One concrete sample was collected from a random location on the balcony outside each of the three residential units. The balconies of each of these upper-floor units (i.e., not ground-level patios) were observed to be similar in construction to the upper-floor balconies at the other buildings. Each balcony consists of the concrete slab dating to the original building construction with no coatings present on the slabs.

Results of the three bulk concrete samples collected from balcony surfaces were reported with PCB concentrations ranging from non-detect (<0.033 ppm) to 24.3 ppm. The highest concentrations of PCBs were reported at the locations closest to the building face (nearest the slab caulking joint). These results are consistent with the balcony concrete samples at Buildings A, B, C, and X, which were reported with concentrations ranging from non-detect to 21.4 ppm.

### Balcony Façade Concrete

One concrete façade sample was collected at a distance of 6.0 to 6.5 inches away from the vertical panel joint at Units 25-32 and 24-517. Results of the two bulk concrete samples collected from the vertical surfaces were reported with PCB concentrations of 0.245 and 0.276 ppm. This data is consistent with results for the other buildings, where PCB concentrations in concrete typically decreased below 1 ppm within 6 inches of a vertical joint.

## **2.3.2 Patios/Door Steps – Ground Surface**

Ground-level concrete patios associated with a particular residential unit (as seen on the west face of Building A) are present along the western face of Building E outside each of the eight ground-floor units. Concrete door step pads, approximately 4.5 by 4.5 ft, are present outside south-facing ground-floor units of Building F (2 unit entries and 4 daycare entries) and Building Y (3 unit entries). Caulking and concrete samples were collected from one patio (Building E Unit 28-11), and two door steps (Building F Unit 31-12 and Building Y Unit 24-103) as summarized on Table 2-3.

### Patio Caulking

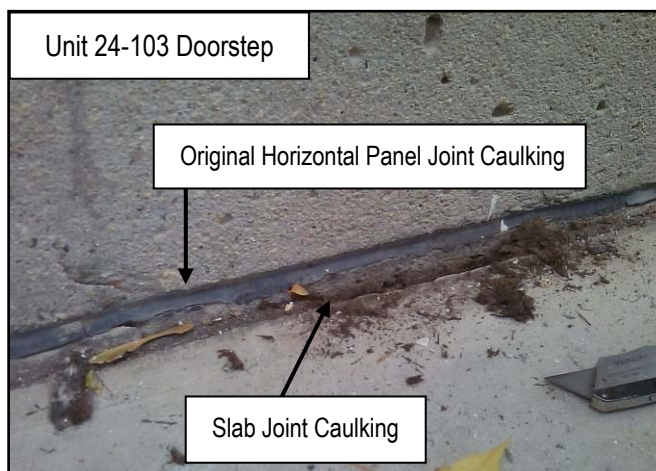
Two patio caulking samples were collected from the ground-level exterior of Building E at Unit 28-11. One sample was collected from the patio slab to vertical wall joint while the other was collected from the horizontal panel caulking joint located directly above the patio slab joint. As observed at Buildings A and B, the ground-level patio slabs appear to be new installations (not original to the building), but the caulking at Building E patios was visibly different from the light gray intact caulking observed at Building A and B patios. The result of the bulk caulking sample collected from the patio slab to vertical wall joint at Building E was reported with a PCBs at 1,257 ppm, which is higher than the patio joint caulking concentrations reported at Building A (27.8 and 64.9 ppm) and Building B (50.8 ppm). The sample collected from the horizontal panel joint located directly above the patio slab joint was reported at 21,100 ppm, which is consistent with other panel joint results.

### Patio Concrete

One concrete sample was collected from the surface of the patio at Building E Unit 28-11. The patio slab at this and all other Building E ground-level units appeared to be of new construction as described above. Consistent with the results reported for Building A and B ground-level patios (8 out of 9 locations reported with PCBs < 1 ppm within 12 inches of the patio slab joint), the concrete sample collected from the Building E patio was reported with a PCB concentration of 0.381 ppm at a distance of 12 inches from the caulked joint.

### Doorstep Caulking

Three doorstep caulking samples were collected from the ground-level exteriors of Building F (Unit 31-12) and Building Y (Unit 24-103). Two samples were collected from the doorstep slab to vertical wall joint and one sample was collected from the horizontal panel caulking joint located directly above the doorstep slab joint. At both Buildings F and Y, the caulking at the doorstep slab to vertical wall joint consisted of a brown fibrous material not observed at any other building joints. Results of the two bulk samples collected from these joints were reported with PCB concentrations of 737 and 1,040 ppm. The sample collected from the horizontal panel joint



located directly above the doorstep slab joint at Building F was reported at 116,000 ppm, which is consistent with other panel joint results.

#### Doorstep Concrete

Two concrete samples were collected from the surface of the doorsteps at Buildings F (Unit 31-12) and Y (Unit 24-103). PCB concentrations were detected at 0.257 and 0.073 ppm in the two samples collected at distances of 12 inches from the doorstep slab joint. These results are similar to the surface sample collected from the patio at Building E, which had a PCB concentration of 0.381 ppm.

### **2.3.3 Interior Residential Unit Caulking and Accessible Surfaces**

Similar to the other buildings, Buildings E, F, and Y interior residential unit caulking consists of an intact bead of white caulking around the perimeter of the metal window and door frames. Only doors leading to the outdoors (balcony or patio doors) contain a perimeter caulking bead; interior doors leading to hallways do not contain caulking at the door frame. The interior window & door caulking was installed in the 1990s at the same time as the exterior window & door caulking during a window replacement project. The caulking seals the window and door frames either to an adjacent concrete wall (if the frame is at the corner of a room), or to a metal edge cap over the corner of a gypsum wallboard (if the frame is not positioned adjacent to a concrete column).

The smallest units contain one stand alone window and one larger window and door panel for an estimated 56 linear feet of interior caulking. The largest units contain three standalone windows and one larger window and door panel for an estimated 100 linear feet of interior caulking. There are also some units in Buildings E, F, and Y between the smallest and largest sizes with a total interior caulking volume that falls within the 56 - 100 linear foot range.

The analytical data collected from residential unit interiors is presented below and is summarized on Table 2-4.

#### Interior Caulking

In each of the Building E, F, and Y units sampled, one living room door/window joint was selected for bulk caulking sample collection. In addition, one saline wipe sample and one hexane wipe sample was collected from the same area at each selected joint. The interior construction of the joint was inspected after removing each section of caulking, and the construction was observed to be similar to the interior joints at other buildings. No unique interior caulking materials were observed in any of the units sampled.

The results of the saline wipe samples collected from interior caulking were reported as non-detect for PCBs at all three sample locations as they were not detected above the laboratory's minimum reporting limits ( $< 0.5 \text{ ug}/100\text{cm}^2$ ). Similarly, the results of the hexane wipe samples collected from the same joints were also all reported as non-detect for PCBs. These results were lower than observed in the other buildings, as some detectable levels of PCBs were reported in the hexane wipe samples from the other buildings.

The results of the bulk caulking samples collected from the same locations as the wipe samples were reported with PCBs ranging from 38.5 to 136 ppm, with an average result of 71.1 ppm. These results are also slightly lower than Buildings A, B, C, and X, which were reported with an average concentration of 169 ppm.

#### Interior Adjacent Surfaces

Three surface wipe samples were collected from each apartment unit to assess interior surfaces adjacent to caulking, including walls, window frames, and floors. Sample distribution was biased to assess three locations near each caulked window or door joint that was sampled as described in the previous section. All adjacent surface wipe samples were collected from accessible surfaces using a hexane-preserved wipe over a  $100 \text{ cm}^2$  sample area.

The results of all nine adjacent surface wipe samples collected from the three apartments were reported as non-detect for PCBs ( $<0.5 \mu\text{g}/100\text{cm}^2$ ). These wipe sample results were also lower than observed in the other buildings, as some detectable levels of PCBs were reported in the wipe samples for Buildings A, B, C, and X.

### **2.3.4 Indoor Air**

Six indoor air samples were collected for PCB analysis: one from each of the three Building E, F, and Y units listed above, and follow-up samples were collected from Building E Units 27-22, 24-417, and 25-32. In addition, one ambient outdoor air sample was collected from the courtyard west of Building E for background comparison to indoor air concentrations. These results are summarized in Table 2-5.

Analytical results were reported with total PCB homologs at  $< 5.0$  nanograms (ng) per cartridge in the outdoor air sample, as PCBs were not reported above the laboratory's minimum detection limit. The indoor air samples were reported at concentrations ranging from 15.2 to 96.7 ng/cartridge. These results translate to  $< 17.5$  nanograms per cubic meter ( $\text{ng}/\text{m}^3$ ) in the background outdoor air and 52.1 to 331.7  $\text{ng}/\text{m}^3$  in the indoor air samples after correcting the sample volumes to ambient temperature and pressure per EPA's method TO-10A guidelines.

In comparison to the action levels developed for indoor air at the Site, all but one of the results (331.7  $\text{ng}/\text{m}^3$  in the initial sample collected from Unit 25-32) were reported with PCB concentrations below the most stringent action level of 140  $\text{ng}/\text{m}^3$ . It should be noted that Unit 25-32, a one-room studio, was cluttered with boxes of files and other materials at the time of sampling as a new tenant had just moved in. Because the 331.7  $\text{ng}/\text{m}^3$  result was nearly 2.5 times higher than the next highest indoor air result, and this was the first sample collected from a one-room studio at the Site, two follow-up samples were collected from other Building E units. The results of these follow-up samples were consistent with other site-wide indoor air results, with a concentration of 52.1  $\text{ng}/\text{m}^3$  calculated for another one-room studio (Unit 24-417) and a result of 80.5  $\text{ng}/\text{m}^3$  calculated for a one-bedroom apartment (Unit 27-22). A third follow-up sample was collected from Unit 25-32 on February 4, 2011 to determine whether the original result of 331.7  $\text{ng}/\text{m}^3$  was an anomalous result. The follow-up sample result was more consistent with the data from other residential units, as the PCB concentration was calculated to be 106  $\text{ng}/\text{m}^3$ .

With the exception of the initial sample collected from Unit 25-32, the Building E, F, and Y air sampling results were consistent with the indoor air concentrations from Buildings A, B, C, and X, which were reported with indoor concentrations ranging from  $< 16.8$  to 100.8  $\text{ng}/\text{m}^3$ .

## **2.4 SAMPLE RESULTS – FAÇADES**

This section includes a description of the samples collected from Building E, F, and Y exterior panel caulking and concrete from locations that are not associated with residential units (i.e., exterior locations not accessible from patios or balconies). The results of these samples are presented in the context of the Buildings A, B, C, and X data, and are also summarized in Table 2-6.

With the exception of the portions of the Building Y façades that were constructed without caulking (similar to Building X), the Building E, F, and Y façades can each be compared to a Building A, B, C, or X façade of similar construction, as summarized below:

- Balcony façades (similar to A, C, X west; B south): E west, F south, Y south, F west (two balconies only)
- Exposed façades with lobby entrances and many windows (similar to A, C, X east; B north): E east, F north, Y north

- Exposed façades with no entrances and little to no windows (similar to A and C north and south and B east): E north, Y west (elevator shaft and elevator lobby column portion only)

The eastern façade of Building Y and a portion of its western façade are unique to the high-rise construction, as the majority of these façades are not constructed of pre-cast concrete panels surrounded by caulking. Similar to Building X, the only caulking apparent on these façades includes:

- Window caulking (east façade contains only one window per floor, north façade contains one small window every third floor)
- Caulking associated with balconies (balcony slab joint and window/door perimeter joints), where one double-width balcony is present only on floors 18, 19, 20, 21, and 22 of the eastern façade

### **2.4.1 Exterior Building Caulking**

Two exterior panel caulking samples were collected from ground level elevations along the northern façade of Building E (non balcony wall) and southern façade of Building Y (outside the boiler room). The joints contained original black caulking similar to the wall panel joints at the other buildings. The samples were reported to have PCB concentrations of 18,100 ppm (Building E) and 6,290 ppm (Building Y). These results are similar to the other building results which had PCB concentrations ranging from 60 to 176,000 ppm in caulking sampled from wall panel joints.

### **2.4.2 Concrete Not in Direct Contact with Caulking**

Concrete was sampled from the exterior façades of Buildings E and Y to confirm the migration patterns observed at the other buildings, where decreasing levels of PCBs were observed with increasing distance from the caulking.

Two sets of concrete samples were collected below horizontal joints at Buildings E and Y. Samples were collected from beneath horizontal joints at distances of 6.0 to 6.5 and 12 to 12.5 inches from the joint at ground floor panels on the east face of Building E and on the north face of Building Y. Both sets of samples were collected from exposed façade faces (no overhanging roof or balconies present). It is noted that no additional characterization samples of concrete in direct contact or within six inches of the exterior caulking were collected for analyses from Buildings E, F, and Y, as it has been assumed that concrete in these areas contains PCBs and will be encapsulated.

The results of the samples beneath horizontal joints confirmed that detectable concentrations of PCBs have spread beneath the joints to a distance of at least twelve inches. However, PCB concentrations were well below 1 ppm at each tested location ranging from 0.107 to 0.222 ppm.

In addition, one concrete façade sample was collected at a distance of 6.0 to 6.5 inches laterally away from the ground level vertical panel joint at Building Y south outside the boiler room, and one sample was collected adjacent to two vertical joints on balconies. The balcony data was presented in Section 2.3.1 (PCBs detected at 0.245 and 0.276 ppm 6 inches away from the vertical joint). A PCB concentration of 0.149 ppm was detected in the Building Y sample. This result is similar to Buildings A, B, C, and X results, which indicated that PCB concentrations typically decreased to below 1 ppm within 6 inches of a vertical caulking joint.

#### **Building Y East Façade Concrete**

In addition to the concrete samples collected from locations adjacent to caulking joints, one concrete sample was collected from a random location on the east façade of Building Y that was representative of portions of the high-rise construction without caulking. As predicted by the Building A model (i.e., the exterior caulking is the source of PCB impacts to concrete) and as seen in the similar Building X samples, no detectable concentrations of PCBs were reported in the concrete sample collected from the eastern façade of Building Y without caulking in the construction.

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## **2.5 ADJACENT GROUND SURFACES**

No samples were collected from adjacent ground surfaces surrounding Buildings E, F, and Y during this characterization phase. Because the exterior façade characterization data for Buildings E, F, and Y are consistent with the façade data for Buildings A, B, C, and X, it is reasonable to assume that PCB leaching and transport from these buildings would be similar to these buildings. In all adjacent asphalt, brick, and concrete ground surface characterization samples collected around the other buildings, results were reported with PCB concentrations < 1 ppm. As such, there is no evidence to suggest that paved ground surface coverings adjacent to Buildings E, F, & Y would contain PCBs at concentrations > 1 ppm.

Samples of unpaved ground surfaces (grass-, stone- or mulch-covered soils) adjacent to Buildings E, F, and Y will be collected at a later date as part of the soil remediation plan development. As mentioned previously, soil samples from higher exposure potential areas (designated play areas and lawns) were collected and none of the data warranted immediate activities.

### **3. DATA USABILITY ASSESSMENT**

This data quality and data usability assessment has been conducted to review the 60 primary samples collected from September 2010 to February 2011 in support of Building E, F, and Y characterization activities. This precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) evaluation includes an assessment of those parameters as well as quality assurance / quality control (QA/QC) samples as they affect the usability of sample results. These indicators have been examined in the context of the intended use of the data, and an overall assessment of site conditions.

Data validation and review was conducted both by W&C and by a third-party validator, Data Check, Inc. of New Durham, New Hampshire. This review included a check of field documentation including sample collection and preservation methods, a check of the laboratory data and documentation, a review of the internal laboratory QA/QC procedures and results including surrogate recoveries, matrix spike and matrix spike duplicate results, blank results, laboratory control standard results, an evaluation of sample holding times, and field duplicate results. The assessment was performed in general conformance with USEPA Region I Guidelines and the Quality Control Guidelines for the Acquisition. Data Check's data validation summaries are provided in Appendix C.

All bulk and surface wipe samples received by Analytics Environmental Laboratory of Portsmouth, New Hampshire were extracted by USEPA Method 3540C (Soxhlet Extraction) and analyzed for PCBs by USEPA Method 8082. All air samples were received by Alpha Analytical Laboratory of Mansfield, Massachusetts for PCB analysis in accordance with USEPA Compendium Method TO-10A guidelines.

#### **3.1 PRECISION**

To assess precision, field duplicate samples were collected at an approximate frequency of one duplicate sample per twenty primary samples during the characterization sampling activities. A total of three duplicate samples were collected to analyze the precision of the primary sample results: one pair of samples was collected from caulking, one pair from concrete, and one pair of surface wipes. During this event, a duplicate indoor air sample was not collected. Relative percent differences (RPDs) between the primary and associated duplicate samples were within acceptance criteria for the concrete and caulking sample pairs ( $\leq 50\%$  for solid matrices), and no data qualifiers were applied. For the pair of surface wipe samples, Aroclor 1254 was not detected in sample PTF-CWK-24517-0828, but was detected at  $2.4 \mu\text{g}/100 \text{ cm}^2$  (greater than two times the reporting limit) in duplicate sample PTF-CWKD-24517-0838. The detected and non-detected Aroclor 1254 results were estimated (J, UJ) in these two samples due to poor field duplicate precision.

Precision was also assessed by examining the RPD between column results in comparison to acceptance criteria ( $\leq 25\%$ ). Column results typically differ in solid matrices due to heterogeneities inherent to the sample matrix. Whether or not the RPD meets acceptance criteria, the laboratory reports the higher of the two column results. Qualifiers were applied to the Aroclor 1254 results for five samples due to column results reported outside RPD acceptance criteria. These qualifiers are included in the analytical summary tables provided with this report.

#### **3.2 ACCURACY**

Accuracy of the analytical data was assessed by reviewing recoveries for matrix spikes (MS), matrix spike duplicates (MSD), surrogates, laboratory control samples (LCS) and laboratory control sample duplicates (LCSD). After review of this information, no qualifications were applied to the data as a result of MS/MSD percent recoveries. All PCB surrogates met acceptance criteria or were diluted out with one exception; no qualifications were applied to the data. The LCS/LCSD samples met acceptance criteria for the data packages analyzed by Analytics (solids and surface wipes), and no qualifications were applied to the data. However, LCS recoveries for the air samples collected on



September 28, 2010 (Alpha Analytical package L1015311) were reported above acceptance criteria (>140%) for tetra and pentachlorobiphenyl homologs; as a result, total homologs have been qualified as estimated (J) for these four samples due to high LCS recoveries. The high LCS recovery indicates a potentially high bias for these four indoor air results.

### **3.3 REPRESENTATIVENESS**

Consistent procedures and laboratory analysis of the data were achieved. Sample containers were packed on ice and were accompanied by complete chain of custody forms from the time of sample collection until laboratory delivery. All samples were extracted and analyzed within the recommended 14-day holding time for the extraction method. No target analytes were detected in the laboratory method blank analyses for any of the data packages, and no qualifications were applied to the data.

Field equipment blank samples, collected at an approximate frequency of one per twenty primary samples during this sampling event, were non-detect for PCBs in both field blank samples; no qualifications were applied to the data.

### **3.4 COMPLETENESS**

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount of valid data expected. The data packages were reviewed to ensure that all sample and associated quality assurance results were available. Results of the completeness review indicated that all collected samples were analyzed and all quality control results were available to complete the data validation process.

### **3.5 COMPARABILITY**

Comparability measures the degree of confidence with which one data set can be compared to a related set of data. Based on a review of established standard methods and procedures for collection, analysis, and reporting of data, the data collected during this sampling event are considered to have met the requirements for comparability.

### **3.6 SENSITIVITY**

Sensitivity was evaluated based on a review of the sample quantitation and reported quantitation limits. Laboratory reported detection limits typically met the site data quality objective (reporting limit  $\leq 1$  ppm for bulk samples and  $< 0.5 \mu\text{g}/100 \text{ cm}^2$  for wipe samples), but sample dilutions did not make it possible to meet this objective for many of the characterization samples due to elevated PCB concentrations in these samples. In each instance where a sample was reported with an elevated detection limit, the reported concentration was indicative of PCB Remediation Waste or Bulk Product Waste, and the material represented by that sample has been included in the scope of this remediation plan. As such, those samples reported with elevated detection limits do not affect the overall quality of the data given that the data provided the information needed to develop the remediation plan.

### **3.7 CONCLUSION**

Based on a review of the analytical results with regards to the PARCCS parameters, this data quality / data usability assessment indicates that the characterization data is of sufficient quality for use in developing the conceptual site model and the remediation plan presented herein.

## 4. REMEDIATION PLAN

This section details the proposed remediation of PCB-affected media at Buildings E, F, and Y of Peabody Terrace. In general, the PCB characterization data collected from Buildings E, F, and Y support the model developed for Buildings A, B, C, and X, and the remediation plans developed for Buildings A, B, C, and X will be carried forward for Buildings E, F, and Y.

### 4.1 REMEDIATION OVERVIEW

The remediation plan proposed herein is a risk-based request prepared in accordance with 40 CFR Part 761.61(c). While all caulking and soils containing PCBs > 1 ppm will be removed for off-site disposal, the majority of the PCB-impacted concrete will remain in-place and be encapsulated with a protective coating. The on-site encapsulation of PCB remediation waste is an interim solution designed to shield impacted building materials from the effects of weathering and leaching mechanisms, thereby eliminating potential exposure pathways and mitigating the potential for PCB transfer via direct contact and/or leaching to other media/materials. Accordingly, there will be no resultant exposure to PCBs in the contained concrete, resulting in conditions protective of human health and the environment. This approach is considered an interim measure, which was considered to be preferable over a concrete removal option given the structural and waterproofing concerns as well as the architectural significance of the buildings. Proper disposal of any remaining PCB remediation waste will be required upon removal of the material or at the time of building demolition.

The remediation plan consists of an exposure pathway elimination approach that will minimize the level of disruption to tenants and allow the families to stay within the apartment units during the remediation work. The proposed sequence of remediation activities is provided below:

- Power washing of the exterior concrete façade.
- Removal and off-site disposal of exterior caulking, including:
  - Original caulking (PCB bulk product waste) – double bead panel & column caulking on Buildings E and F (combined total of approximately 13,340 linear feet) and Building Y (approximately 19,700 linear feet):
    - Horizontal and vertical joints between façade panels and columns; and
    - Upper-floor balcony slab joints
  - Replacement caulking (PCB remediation waste) – newer caulking installed in/around the 1990's on Buildings E and F (combined total of approximately 10,700 linear feet) and Building Y (approximately 9,735 linear feet):
    - Window and door joints; and
    - Ground-floor patio slab joints.
- Surficial cleaning of metal window & door frames in direct contact with caulking:
  - The metal window & door frames will be subject to surficial cleaning after caulking removal; extent of cleaning to be verified by visual inspections and surface wipe samples.

- On-site encapsulation of exterior concrete in direct contact with caulking (within joints):
  - Encapsulate with two coats of a liquid epoxy, such as Sikagard 62 or equivalent, followed by baseline wipe testing.
- Application of replacement caulking within encapsulated joints (Sikaflex 2C, or equivalent).
- Conduct façade repairs as needed (concrete removal and replacement in deteriorated areas).
- Encapsulation of exterior vertical concrete surfaces not in direct contact with caulking (two coats of an acrylic coating, such as Sikagard 670W, or equivalent):
  - High-occupancy areas (ground floor exterior walls, balcony/patio vertical surfaces) – remediation of surfaces with PCBs > 1 ppm;
  - Low-occupancy areas (exterior walls at 2<sup>nd</sup> floor level and higher; no balcony access) – remediation of surfaces with PCBs > 25 ppm; and
  - NOTE: Although PCBs impacts are limited to measurable distances from caulking joints, the clear acrylic protective coating will be applied to all exterior vertical concrete surfaces.
- On-site encapsulation of balconies – horizontal concrete surfaces not in direct contact with caulking:
  - Given PCBs > 1 ppm and limitations to removal, the surfaces will be encapsulated with a liquid balcony coating system designed for weatherproofing, such as BASF Sonoguard, or equivalent.
- Remediation of ground level surfaces:
  - Concrete patios (Building E) – similar to the remedy for Building A and B patios as described in Modification No. 3, Building E patios will be coated with the same product used on the vertical surfaces (clear acrylic coating, such as Sikagard 670W) for weatherproofing and consistency purposes on concrete within 24 inches of the building façade.
  - Concrete door steps – same proposed remediation as concrete patios.
  - Soil (grass-covered, mulch-covered, stone-covered) – all soils containing PCBs > 1 ppm will be excavated for off-site disposal (soil remediation plan to be submitted at a later date).
- Removal of interior window & door caulking with PCBs over 1 ppm.
- Ongoing monitoring and maintenance of encapsulated areas (monitoring and maintenance plan to be submitted at a later date).

The product technical specifications referenced above are provided in Appendix F of the Building A Plan.

In addition to descriptions of the proposed remediation activities outlined above, the following sections provide details on the proposed site preparations and controls, perimeter air monitoring, verification sampling plans, waste storage and disposal, site restoration, and recordkeeping requirements. The activities are presented in the order of the proposed implementation sequence. Many of these activities will be conducted in the same manner as written in the Building A and Buildings B, C, and X Plans, and portions of this plan refer the reader to these plans or the Building A, B, C, X Status Report for additional details.

## 4.2 SITE PREPARATION AND CONTROLS

For Buildings E, F, and the lower levels of Building Y, site preparation and controls will be implemented as described in Section 5.2 of the Building A Plan and the approved Contractor Workplan (June 4, 2010). For the higher levels of Building Y, access to the removal areas will be gained by a combination of staging mechanisms (swing staging, mast climbers) depending on the façade configurations. Engineering controls to manage dust and debris in these work areas will be implemented as described in Section 5.2 of the Building A Plan and the approved Contractor Workplan. Modifications to the perimeter air monitoring plan described in the Building A Plan are presented below.

## 4.3 PERIMETER AIR MONITORING

Air monitoring will be conducted in general accordance with the perimeter air monitoring plan included in Appendix E of the Building A Remediation Plan, which includes:

- Recording visual observations of the presence or absence of visible dust outside of work containments;
- Recording ambient air dust concentrations with a direct-reading aerosol particulate meter capable of determining dust concentrations to 0.001 mg/m<sup>3</sup>, such as a Thermo MIE Personal Data RAM; and
- Recommending modified work techniques or increased engineering controls as warranted by visible dust observations and/or recorded dust concentrations.

However, based on the results from the Buildings A, B, C, and X work, the perimeter air monitoring during Building E, F, and Y work is proposed to be conducted at a modified frequency and on a task-specific basis as described below.

As summarized in the Building A, B, C, X Status Report, there were no exceedances of the total airborne particulate action limit (0.1 mg/m<sup>3</sup> above background) or visible dust observed during any caulking removal activities. In general, the total airborne particulate levels measured at locations around the work area perimeter during caulking removal were typically at background levels (some readings may have been slightly higher while other readings may have been slightly lower than background concentrations). The engineering controls in place and the tools used for the task did not promote dust generation or measurable particulate dust that was significantly different from background levels in the Support Work Zone (SWZ) or perimeter to this zone. Given the results of six months of monitoring data from caulking removal at the perimeter of Buildings A, B, C, and X, particulate dust monitoring with a direct-reading aerosol particulate meter is not proposed to be performed during caulking removal work at Buildings E, F and Y. Although instances of visible dust are unlikely for this task, on-site personnel will be aware that any observations of visible dust would require a work stoppage to modify work techniques and/or increase engineering controls.

At Buildings A, B, C, and X, visible dust and short-term airborne particulate action level exceedances were occasionally recorded as a result of sawcutting and chipping concrete, especially at low, ground level elevations. After stopping work and/or implementing corrective measures, the total airborne particulate levels measured at locations around the work area perimeter during concrete removal were typically at or below background levels, and ranged up to 0.07 mg/m<sup>3</sup> above background. In addition to continuing the use of any modified work techniques and improved dust controls that were implemented effectively at Buildings A, B, C, and X, airborne particulate dust monitoring will continue to be performed during concrete removal activities at Buildings E, F, and Y. However, the revised air monitoring will include task-specific monitoring as opposed to regular hourly monitoring, as the field engineer noted that hourly monitoring at Buildings A, B, C, and X did not always capture building material removal work that often occurred within limited windows of activity.

The revised air monitoring will provide more accurate data for ambient air dust levels as it will be implemented only during active concrete removal. For Building E, F, and Y work, airborne particulate dust monitoring will be performed

at a minimum frequency of twice a day and will be biased towards times of day when concrete removal is actively occurring. Other measures (e.g., temporary work shut downs, implementation of engineering controls, or changes in work practices if visible dust is observed outside of the containment areas) will also continue to be conducted. Particulate dust concentrations will be recorded at an upwind (background) location in addition to several biased locations designated in the perimeter to the work area. Readings will be collected by the field engineer or designated representative trained in the use of the equipment at each location using a Thermo MIE Personal Data RAM Model PDR-1000 monitor or equivalent dust monitor.

Finally, this plan proposes one additional modification to the perimeter air monitoring plan during concrete removal at Building Y. The Building Y east façade and the elevator shaft portion of the north/west façade does not have panel caulking present, and concrete characterization data from Building Y east and the similar Building X façade has been reported as non-detect for PCBs. As such, particulate dust monitoring with a direct-reading aerosol particulate meter will not be performed during concrete repair from these façades; however, engineering controls to prevent dust migration and visual observations will still be implemented as described above.

#### **4.4 FAÇADE POWER WASHING AND WATER TREATMENT**

To prepare the concrete facade for surface coating and patching, all exterior concrete surfaces will be coated with Sika FerroGard 903 (a corrosion inhibiting impregnation coating) and then power washed. In addition, a sand-induced power washing method will be employed to remove a coat of paint from the undersides of balconies. While the remediation plan approved by EPA on April 15, 2010 indicated that the façade power washing was to occur after the removal and replacement of exterior caulking, a modification to the work sequence was approved by EPA to allow for power washing to occur earlier in the sequence of work (prior to caulking removal). This revised sequence of work will be maintained for work at Buildings E, F and Y.

Similar to the process implemented at Buildings A, B, C, and X, power washing will occur within poly sheeting containments where they are able to be constructed around working platforms or on sections of a building façade. As noted in the Contractor Workplan, safety is a priority with work on the high rise and upper floors of the lower rise buildings (issues associated with weather and wind) and containments around certain sections of the access equipment (e.g., swing staging) will not be possible during all work. Any power wash water generated during the work will be collected in polyethylene collection bladders constructed at the base of each façade and adhered to the concrete. Submersible pumps will be used to transfer the water from the bladders to the onsite water treatment system. The system will consist of a 4,000 gallon polyethylene influent storage tank, a flow meter / totalizer, a 5 µm bag filter, three granular activated carbon (GAC) units in series, a 1 µm bag filter, and a 4,000 gallon effluent storage tank. Water will be collected in the influent tank and then batch treated through the system once a sufficient volume of water has been generated. This configuration is the same as the treatment system that was effectively used during the second half of façade work in 2010.

Based on the existing laboratory data from the 2010 operations, the wash water influent and effluent will be sampled for laboratory analysis of PCBs (minimum detection limit of 0.5 micrograms per liter [µg/L]) at a minimum frequency of one sample per every 4,000 gallons of water treated (i.e., the volume of the holding tanks). The in-line sampling port used to represent the wash water influent is located immediately after water leaves the influent storage tank and before it reaches the first bag filter. The in-line sampling port used to represent the wash water effluent is located immediately after water leaves the final bag filter. The proposed sampling frequency is based on the batch treatment process typically implemented on-site, where the collected water is held in the influent storage tank until nearly full, and then the entire volume of water is batch treated. Treated wash water will be managed as described in Section 4.16 of this Plan.

## **4.5 EXTERIOR CAULKING REMOVAL**

The exterior caulking data reported for Buildings E, F, and Y follow the Buildings A, B, C, and X model, with PCB concentrations indicative of original caulking (PCB bulk product waste) present within panel joints and balcony joints, and concentrations indicative of replacement caulking (PCB remediation waste) present in window, door, and other joints subject to past repairs. As outlined in the Building A Remediation Plan, all caulking containing PCBs > 1 ppm will be removed and disposed off-site.

The caulking removal task includes the removal and off-site disposal of the exterior caulking at Buildings E, F, and Y. This consists of approximately 13,340 linear feet (Buildings E/F) and 19,700 linear feet (Building Y) of double bead panel & column caulking defined as PCB bulk product waste (approximately 33,040 linear feet total). Caulking removal also includes approximately 10,700 linear feet (Buildings E/F) and 9,735 linear feet (Building Y) of replacement window & door caulking defined as PCB remediation waste (approximately 20,435 linear feet total). The caulking removal will be conducted as described in Section 5.3 of the Building A Plan; however, air monitoring will not be performed during this task at Buildings E, F, and Y as described in Section 4.3 above.

## **4.6 MATERIALS IN DIRECT CONTACT WITH CAULKING**

### **4.6.1 Concrete in Direct Contact with Caulking**

Based on the results from the previous buildings, concrete in direct contact with caulking (i.e., within the joints) is assumed to contain PCBs > 1 ppm. Because the physical removal of PCBs to  $\leq 1$  ppm in concrete in direct contact with the caulking is infeasible given structural, waterproofing, and aesthetic concerns, and the anticipated disturbance to tenants within the occupied building, a risk-based remedial approach has been developed. The proposed remedial technique for concrete in direct contact with caulking is encapsulation with two coats of a liquid epoxy, such as Sikagard 62 or equivalent.

The remainder of this section summarizes the locations and approximate quantities of concrete in direct contact with caulking at Buildings E, F, and Y, and also includes a proposed baseline sampling plan for encapsulated surfaces.

The concrete in direct contact with caulking is present at the following four joint types:

1. Exterior façade panels & columns (concrete to concrete joints):
  - a. Direct contact concrete material exists within horizontal joints above and below each floor slab, within vertical joints between concrete panels and columns, and within short vertical seams beneath patio/balcony windows and doors.
  - b. Exists along approximately 33,040 linear feet of the concrete to concrete joints.
  - c. Joint depths range from 1-2 inches into building.
  - d. Direct contact concrete present on both interior returns of the joint ( $33,040 \times 2 = 66,080$  ft).
2. Windows & doors (concrete to metal joints):
  - a. Direct contact concrete material exists within horizontal and vertical window and door joints.
  - b. Exists along approximately 20,435 feet of the concrete to metal (window / door) joints.
  - c. Joint depths range from 1-2 inches into building.

- d. Direct contact concrete present on a single interior return (the second interior return consists of a metal window/door frame).
3. Balcony horizontal seams (concrete to concrete joints):
  - a. Direct contact concrete material exists at the edge of upper floor balconies where the horizontal concrete balcony slab meets the vertical wall.
  - b. Linear footage is counted within the 33,040 feet of the concrete to concrete joints listed above.
4. Patio and/or doorstep horizontal seams (concrete to concrete joints):
  - a. Direct contact concrete material exists at the edge of the ground level patio or doorstep horizontal concrete pads where the horizontal surface meets the vertical wall.
  - b. Exists along approximately 140 feet of the concrete to concrete patio ground level concrete joints.
  - c. Included in scope of work given PCB concentrations in caulking at the pad to wall joint; although the concrete pad contains PCBs < 1 ppm, the concentrations in the new caulking indicate that a former PCB-containing caulking was present at this location and is likely to have impacted the underlying concrete on the wall portion of this joint.

Surface preparation for the selected remedial action includes a visual verification of caulking removal as described in the previous section; no physical removal or chemical decontamination of the concrete will be conducted unless it is scheduled for repair. The concrete in direct contact with the former caulking will be encapsulated with a colored protective, epoxy coating such as Sikagard 62, or equivalent. Verification samples collected from Buildings A, B, C, and X indicated that the Sikagard 62 effectively contained residual concentrations of PCBs in concrete at panel/column joints, patio slab to building façade joints, and at concrete to metal window and door joints (all 33 samples reported with PCBs < 1 µg/100cm<sup>2</sup>, with 31 of these reported as non-detect). Initial results from the encapsulated balcony slab joints indicated a slightly lower level of effectiveness at these locations with Sikagard 62 alone; however, the overall encapsulation system (two coats of Sikagard 62 in the joint followed by two beads of Sikaflex 2C and two coats of BASF Sonoguard) met target cleanup levels at 10 of 11 balcony joint locations with the one location only slightly over the target level of 1 µg/100cm<sup>2</sup>.

The concrete in direct contact with the former caulking at panel/column joints and at concrete to metal window and door joints will continue to be encapsulated with two contrasting colored coats of the epoxy. Based on the initial results from the Building A, B, C, and X work, the patio slab to building façade joints, doorstep slab to building façade joints, and balcony slab to building façade joints will be encapsulated with three coats of the epoxy. As noted in Section 4.10, an additional topcoat (BASF Sonoguard) will also be applied to the balcony surfaces and over the caulked joint.

Given the known concentrations of PCBs in caulking and the large direct contact data set that has been collected for analogous masonry joints at Buildings A, B, C, X, no baseline bulk concrete samples will be collected from concrete in direct contact with caulking at Buildings E, F, and Y. The concrete is assumed to contain PCBs at similar concentrations to that observed in the Building A, B, C, and X data set and the effectiveness of the encapsulation will ultimately be determined by the results of surface wipes collected from the encapsulated surfaces.

The proposed baseline surface wipe sampling frequency for Buildings E, F, and Y is based on the four different masonry joint types at the Building A, B, C, and X results. Two samples will be collected from each of the four joint types on all three buildings, for a total of 24 baseline surface wipe samples. The specific sample locations will be randomly selected, but will be biased to ground-floor or balcony elevations given the higher potential for direct contact exposures at these locations. The purpose of these samples is to evaluate the effectiveness of the

encapsulation and establish a baseline for future monitoring. Wipe samples will be collected using hexane-saturated gauze wipes in accordance with the standard wipe test method (40 CFR 761.123). Duplicate samples and field equipment blanks will be collected at a frequency of 1 per 20 primary samples and submitted to the laboratory as part of the QA/QC procedures associated with sample collection.

Analytical results from the wipe samples of the epoxy will be evaluated to determine whether or not this task is complete as follows:

- Analytical results  $\leq 1 \mu\text{g}/100 \text{ cm}^2$  – task complete and new caulking can be applied.
- Analytical results  $> 1 \mu\text{g}/100 \text{ cm}^2$  – additional surface coating may be applied, and a follow-up surface wipe sample will be collected at an off-set location.

#### **4.6.2 Metal in Direct Contact with Caulking**

The metal window and door frames within the façades are each sealed to the adjacent exterior concrete with a bead of white caulking, installed as replacement material in the 1990s. After caulking removal, the proposed remedial technique for Building E, F, and Y's combined approximately 20,435 linear feet of metal window and door frames in direct contact with the former caulking is surficial cleaning using hand tools followed by cleaning with a commercially available cleaner. No grinding, sawcutting, or physical removal of the window/door frames will be conducted. The same decontamination procedure was used at Buildings A, B, C, and X which demonstrated that this method of decontamination was effective at removing residuals PCBs on the metal frames, as all 68 verification wipe samples were reported to have PCB concentrations below the high occupancy cleanup level of  $10 \mu\text{g}/100\text{cm}^2$  (average result of  $1.5 \mu\text{g}/100\text{cm}^2$ ).

Based on the results of the metal decontamination at Buildings A, B, C, X, the verification sampling frequency is proposed to be reduced from a frequency of 1 sample per every 10 windows or doors to a frequency of one sample per every 20 windows or doors at Buildings E, F, and Y. There are approximately 279 windows or doors present on Buildings E and F, and approximately 282 windows or doors present on Building Y, which will result in an approximate total of 28 primary verification wipe samples. The specific sample locations will be randomly selected; however, most samples will be biased toward ground-floor or balcony-accessible elevations given the higher potential for direct contact exposure. Following wipe testing and achievement of the cleanup levels indicated below, new caulking will be applied to seal the joints.

After a visual verification of caulking removal and surficial cleaning, verification surface wipe samples will be collected from representative locations to verify that the surface preparation is complete. Analytical results from the wipe samples of the metal surfaces will be evaluated to determine whether or not caulking removal was complete as follows:

- Analytical results  $\leq 10 \mu\text{g}/100 \text{ cm}^2$  – caulking removal complete and new caulking can be applied.
- Analytical results  $> 10 \mu\text{g}/100 \text{ cm}^2$  – additional cleaning of metal frames will be performed, and additional verification wipe samples will be collected at an off-set location.

Wipe samples will be collected using hexane-saturated gauze wipes in accordance with the standard wipe test method (40 CFR 761.123). Duplicate samples and field equipment blanks will be collected at a frequency of 1 per 20 primary samples and submitted to the laboratory as part of the QA/QC procedures associated with sample collection.



## **4.7 NEW CAULKING APPLICATION**

New caulking application will be conducted at Buildings E, F, and Y in the same manner as conducted at Buildings A, B, C, and X; refer to Section 5.5 of the Building A Plan.

## **4.8 CONCRETE REPAIRS**

A primary focus of the façade renovation project is to repair/treat exterior concrete surfaces to prevent further deterioration. In support of this objective, some areas of the façade with extensive spalling (concrete weathering, rebar corrosion, and general deterioration) will require repairs prior to applying any surficial coatings. Façade repairs will generally consist of:

- Sawcutting around sections of damaged concrete to achieve a repair surface bounded by smooth and straight edges (no cutting of existing caulking will be conducted);
- Chipping out the block of cut concrete;
- Grinding and replacing corroded rebar as needed; and
- Patching the surface with new concrete.

Although the Approved plans for Buildings A, B, C, and X indicated that concrete removed from façade areas greater than 12 inches from any horizontal joint and greater than 3 inches from any vertical joint could be managed as waste containing PCBs < 1 ppm, this waste segregation process was not implemented at Buildings A, B, C, and X. In practice, the building debris waste management process was streamlined and all removed concrete managed as PCB waste  $\geq 50$  ppm because the required engineering controls were the same and the volume of concrete was minimal. Consistent with this process, the building material debris generated at Buildings E, F, and Y will be managed as described in Section 4.16 of this Plan.

## **4.9 FAÇADE CONCRETE NOT IN DIRECT CONTACT WITH CAULKING**

Exterior concrete data from Building E, F, and Y façades typically followed the other buildings model, with PCB concentrations decreasing with increasing distance from caulked joints, and migration extending further beneath horizontal joints. Data collected from Buildings E and Y indicated that PCB concentrations decreased below 1 ppm within 6 to 12 inches of horizontal joints and within 6 inches of vertical joints, which was typically the case at Buildings A, B, C, and X. While some concrete has been demonstrated to contain PCBs  $\leq 1$  ppm, the scope of the façade repair and waterproofing project includes the encapsulation of all concrete façades.

Given structural and aesthetic concerns as well as the potential to disturb tenants, no physical removal or chemical decontamination of the concrete will be conducted except where it is required for repairs. The PCBs present in the façade concrete will be encapsulated in place to achieve a barrier such that exposure to residual PCBs is eliminated at the surface. The approximate area of these vertical surfaces, less windows and doors, measures approximately 22,000 square feet on Buildings E and F and approximately 78,000 square feet on Building Y.

Surfaces in need of repair will be patched, and all surfaces will be prepared so that they are dry, clean, and free of significant cracks or pitting. The Sikagard 670W coating, or equivalent, will be applied directly to the concrete to create a containment barrier encapsulating the residual PCBs in the concrete façade. Initial verification data collected from Buildings A, B, C, and X demonstrated that applying two coats of the Sikagard 670W served as an effective barrier to encapsulate any residual PCBs in the concrete, as all verification samples (13 samples collected to date) were reported as non-detect for PCBs ( $< 0.5 \mu\text{g}/100 \text{ cm}^2$ ).

Given the known concentrations of PCBs in concrete from the extensive data set that has been collected for the façades of seven buildings characterized to date and the destructive nature of the testing (requires repair / patching), no additional baseline bulk concrete samples will be collected from concrete façades not in direct contact with caulking at Buildings E, F, and Y. The concrete is assumed to contain PCBs > 1 ppm at locations nearest the caulked joints, and the effectiveness of the encapsulation will ultimately be determined by the results of surface wipes collected from the encapsulated surfaces.

The proposed baseline surface wipe sampling plan includes a total of 19 sample locations, including:

- One sample from each building façade with a relatively small area (E north, F east and west) – 3 samples;
- Two samples from each building façade with a mid-sized area (E east and west, F north and south, and Y west) – 10 samples; and
- Three samples from each building façade with the largest area (Y north and south) – 6 samples.

The specific sample locations will be randomly selected, but will be biased to sample the concrete within three inches of a caulked joint given the known higher concentrations, and at ground-floor or balcony elevations given the higher potential for direct contact exposures at these locations. The purpose of these samples is to evaluate the effectiveness of the encapsulation and establish a baseline for future monitoring. Wipe samples will be collected using hexane-saturated gauze wipes in accordance with the standard wipe test method (40 CFR 761.123). Duplicate samples and field equipment blanks will be collected at a frequency of 1 per 20 primary samples and submitted to the laboratory as part of the QA/QC procedures associated with the sample collection.

Analytical results from the wipe samples of the acrylic coating will be evaluated to determine whether or not this task is complete as follows:

- Analytical results  $\leq 1 \mu\text{g}/100 \text{ cm}^2$  – task complete.
- Analytical results  $> 1 \mu\text{g}/100 \text{ cm}^2$  – additional coating of the product may be applied, and a follow-up verification wipe sample collected at an off-set location.

#### **4.9.1 Building Y Façade Sections Without Panel Caulking**

During the 2010 characterization event of Buildings E, F and Y, one concrete sample was collected from a random location on the east façade of Building Y where the façade does not contain caulked joints between panels and floor slabs. Consistent with two similar Building X samples, the PCB concentration in this sample was reported as non-detect. While the data indicates that the concrete at this location does not require remediation (encapsulation), the scope of the façade repair and waterproofing project includes the coating of these façades (facades without panel caulking) in the same way as all other facades. This will include treating the concrete with a corrosion inhibitor and applying an acrylic protective coating system on all exterior concrete surfaces. No baseline or follow-up monitoring is proposed to be conducted on this façade.

#### **4.10 CONCRETE BALCONIES**

The balcony concrete data reported for Buildings E, F, and Y follow the other buildings model (PCBs > 1 ppm), and the remediation of these surfaces will be conducted in the same manner as Building A, B, C, and X balconies. Building E has 28 single-width and 18 double-width balconies (approximately 3,170 ft<sup>2</sup> total area), Building F has 12 single-width and 10 double-width balconies (approximately 1,585 ft<sup>2</sup> total area), and Building Y has 42 single-width and 24 double-width balconies (approximately 4,455 ft<sup>2</sup> total area). Given structural concerns as well as the potential

to disturb tenants, no physical removal or chemical decontamination of the concrete balconies will be conducted. The PCBs present in this material will be encapsulated in place to achieve a barrier such that exposure to residual PCBs is eliminated at the surface.

Surfaces in need of repair will be patched, and all surfaces will be prepared so that they are dry, clean, and free of significant cracks or pitting. The coatings will be applied directly to the concrete to create a containment barrier encapsulating the residual PCBs in the concrete. The topside of each balcony will be primed and then encapsulated with two coats of BASF Sonoguard, a colored polyurethane liquid coating system that will also serve as a weatherproofing coating. The underside of each balcony, containing only residual concentrations of PCBs at locations nearest the joint at the building face as shown by Building A data, will be coated with a separate breathable waterproof coating. Verification data collected from Buildings A, B, C, and X demonstrated that applying two coats of the Sonoguard served as an effective barrier to encapsulate any residual PCBs in the concrete deck, as 25 out of 26 results were reported with PCB concentrations below the minimum laboratory reporting limit of  $<0.5 \mu\text{g}/100\text{cm}^2$ , and one sample was reported with a PCB concentration of  $0.6 \mu\text{g}/100\text{cm}^2$ .

Given the known concentrations of PCBs in concrete from the extensive data set that has been collected for the balconies of seven buildings characterized to date and the destructive nature of the testing (requires repair / patching), no additional baseline bulk concrete samples will be collected from concrete balconies at Buildings E, F, and Y. The concrete is assumed to contain PCBs  $> 1 \text{ ppm}$ , and the effectiveness of the encapsulation will ultimately be determined by the results of surface wipes collected from the encapsulated surfaces.

Based on the results of the balcony encapsulation at Buildings A, B, C, X, the baseline sampling frequency will be reduced from a frequency of 1 sample per every 5 balconies to a frequency of one sample per every 10 balconies at Buildings E, F, and Y. There are a total of 46 balconies present at Building E, 22 balconies at Building F, and 66 balconies at Building Y, which will result in a total of approximately 13 baseline surface wipe samples.

The specific sample locations will be randomly selected, but will be biased to sample the concrete within twelve inches of a caulked joint given the known higher concentrations at these locations. The purpose of these samples is to evaluate the effectiveness of the encapsulation and establish a baseline for future monitoring. Wipe samples will be collected using hexane-saturated gauze wipes in accordance with the standard wipe test method (40 CFR 761.123). Duplicate samples and field equipment blanks will be collected at a frequency of 1 per 20 primary samples and submitted to the laboratory as part of the QA/QC procedures associated with the sample collection.

Analytical results from the wipe samples of the balcony coating will be evaluated to determine whether or not this task is complete as follows:

- Analytical results  $\leq 1 \mu\text{g}/100 \text{ cm}^2$  – task complete.
- Analytical results  $> 1 \mu\text{g}/100 \text{ cm}^2$  – additional layer of the coating may be applied and additional verification wipe samples collected at an off-set location.

#### **4.11 CONCRETE PATIO SURFACES**

Ground-level concrete patios associated with a specific residential unit are present along the western face of Building E outside each of the eight ground floor units. The ground-level Building E patio results were consistent with Building A and B patio results (concrete pads contain PCBs  $< 1 \text{ ppm}$ ). Similar to the remedy for Building A and B patios as described in Modification No. 3, Building E patios will be coated with the same product used on the vertical surfaces (clear acrylic coating, such as Sikagard 670W) for weatherproofing and consistency purposes on concrete within 24 inches of the building façade. Baseline wipe samples will be collected at the same frequency as the upper floor balconies (1 per 10 units); therefore, one baseline surface wipe sample will be collected from the encapsulated

surface. The location will be the same Building E patio as the baseline bulk concrete sample collected during the characterization phase of work.

#### **4.12 CONCRETE DOORSTEP SURFACES**

Concrete doorstep pads are present outside south-facing ground floor units of Building F (6 pads) and Building Y (3 pads). The ground-level Buildings F and Y doorstep surfaces were consistent with Buildings E patio results (concrete pads contain PCBs < 1 ppm), and treatment of these surfaces will be conducted in the same manner as for the Building E patios (see Section 4.11 above). Baseline wipe samples will be collected at a similar frequency as the patios (1 per 10 units), with two surface wipe samples collected from the encapsulated surfaces at the same Building F and Y doorsteps as the baseline bulk concrete sample collected during the characterization phase of work.

#### **4.13 PAVED ADJACENT GROUND SURFACES**

No samples were collected from paved ground surfaces adjacent to Buildings E, F, and Y during this characterization event. As described in Section 5.10 of the Building A Plan, no remediation is proposed for these surfaces as all asphalt, brick, or concrete samples collected from the Building A perimeter were reported with PCBs < 1 ppm. In further support of the data presented in the Building A Plan, two brick samples collected from a brick walkway immediately adjacent to the east façade of Building X in September 2010 were also reported with PCBs < 1 ppm (0.074 and 0.137 ppm, respectively).

#### **4.14 ADJACENT SOILS**

No soil samples have been collected from unpaved surfaces surrounding Buildings E, F, and Y since initial site characterization activities were performed in September 2009 (refer to Table A-2 in Appendix A of the Building A Plan). Consistent with the Building A, B, C, X approach, following the building façade work, the soil remediation will commence. In support of the subsequent soil remediation plan development, additional soil characterization sampling surrounding Buildings E, F, and Y will be performed in the late summer / early fall of 2011. This data will be used to develop a soil remediation plan for these unpaved adjacent ground surfaces to be submitted to EPA at that time with a goal of conducting the soil removal in the fall of 2011.

#### **4.15 INTERIOR CAULKING**

##### **4.15.1 Residential Units**

The average result for the interior bulk caulking samples from Buildings E, F, and Y residential units was lower than observed in the other buildings. In addition, interior surface wipe data collected from adjacent surfaces in Buildings E, F, and Y residential units were all non-detect, which supports the conclusion in the Building A risk evaluation (Appendix A of the Building A Plan), which found that the levels of PCBs detected are not likely to pose an unacceptable risk to tenants before remedial actions can be completed given the proposed remedy implementation schedule.

Similar to the Building A, B, C, and X plan, in consideration of available remedial options, complete removal of the impacted building materials beneath the interior caulking and integral to the building walls is infeasible given that the materials are structural and/or inaccessible without complete renovation of the interior units. Removal of the caulking and liquid encapsulation of the underlying integral building materials is also an infeasible option – the underlying media could not be effectively coated given their variability and/or inaccessibility. Because substrate encapsulation is

infeasible, a straightforward removal and replacement with new caulking could potentially lead to cross-contamination of that new caulking.

Given the available options, the proposed interior caulking remediation plan includes a four-step process for residential units:

- Interior window/door caulking will be removed within a contained work area;
- Portions of the metal window and door frames in direct contact with the caulking will be cleaned, and post-cleaning verification surface wipe samples will be collected at a frequency of one sample for every 10 residential units;
- New caulking will be installed in the joint; and
- A metal trim or a flexible strip will be installed over the new caulking to prevent future direct contact with newly installed caulking.

Based on recent discussions with Harvard, the interior remedial actions will occur on a schedule independent of the façade work outside of each building, and will occur regardless of whether a unit is currently occupied or not. As discussed in the Building A, B, C, and X Status Report, interior caulking removal and replacement is scheduled to initiate at those buildings in early 2011. Based on these results, the proposed activities described above will be implemented at Buildings E, F, and Y or these activities will be modified if warranted. If a modification is proposed, then a modification plan will be submitted to EPA for review.

#### **4.15.2 Building F Child Care**

As presented in Section 2.1.2, certain caulking materials will be removed from interior locations in the Building F Child Care while the facility is vacated during the exterior façade work scheduled to occur in 2011. These interior materials include:

- Two unique locations with painted caulking present at concrete to concrete joints, where hexane surface wipe data was reported with PCBs at 1.7 and 4.3 ug/100cm<sup>2</sup> in September 2009;
- Caulking present at metal to metal operable window joints (19.0 ppm); and
- Caulking present at metal to metal door joints (34.2 ppm).

At the two unique locations where caulking is present at concrete to concrete joints, the caulking will be removed, and a limited amount of the concrete in direct contact with the caulking will be removed if removal is feasible from a structural standpoint. Bulk concrete samples will be collected from the concrete to determine whether the high-occupancy cleanup level of 1 ppm has been achieved for the remaining concrete. If the 1 ppm cleanup level has been achieved, the surface will be restored and no further actions will be taken with regard to PCBs. If the 1 ppm cleanup level has not been achieved, then additional removals will be attempted if possible and verification samples collected. However, if the 1 ppm level cannot be achieved, then an encapsulation approach similar to the building exterior will be implemented.

At the locations where caulking is present at metal to metal joints on doors and operable windows, the caulking will be removed and managed as PCB waste > 1 and < 50 ppm. The metal components formerly in direct contact with the caulking will be decontaminated following an approach similar to the window frame decontamination approach used for the exterior façade work being performed at metal window frames. After a visual verification of caulking removal and surficial cleaning, verification surface wipe samples will be collected from representative locations at a

frequency of one sample per 50 linear feet of caulking removed to verify that the decontamination is complete. Analytical results from the wipe samples of the metal surfaces will be evaluated as follows:

- Analytical results  $\leq 10 \mu\text{g}/100 \text{ cm}^2$  – caulking removal complete and new caulking can be applied.
- Analytical results  $> 10 \mu\text{g}/100 \text{ cm}^2$  – additional cleaning of metal frames will be performed, and additional verification wipe samples will be collected at an off-set location.

For the removal work described in this section, engineering controls will be implemented similar to those used for other interior residential unit caulking removal activities.

#### **4.16 STORAGE AND DISPOSAL**

PCB waste storage and disposal for Building E, F, and Y remedial activities will be performed in the same manner as for Building A, B, C, and X work. A summary of these procedures is provided below.

Exterior caulking and concrete removed during façade repair work will be managed as a single waste stream and designated as hazardous bulk PCB waste (PCBs  $\geq 50$  ppm). Building debris collected within the polyethylene containment areas and on ground cover sheeting will be gathered and placed in labeled 5 or 16 gallon working containers lined with 6-mil polyethylene bags. When full or at the end of each work shift, the bags will be removed from working containers and transported to the main accumulation area (a locked trailer), where they will be placed in cubic yard boxes labeled for disposal as PCB waste  $\geq 50$  ppm. Filled containers will be transported under manifest for off-site disposal at the EQ-Wayne Disposal, Inc. facility located in Belleville, Michigan, or an equivalent TSCA waste disposal facility.

After removing loose debris, any disposable polyethylene sheeting, PPE, and non-liquid cleaning materials will be managed and disposed of in accordance with 40 CFR 761.61(a)(5)(v). The waste will be consolidated in polyethylene bags and then transported to the main accumulation area (a locked trailer), where the waste will be placed in cubic yard boxes labeled for disposal as PCB remediation waste  $> 1$  ppm and  $< 50$  ppm. Upon completion of the work or when a container is considered full, the remediation waste will be transported under manifest for off-site disposal at the EQ-Wayne Disposal, Inc. facility located in Detroit, Michigan, or equivalent waste disposal facility.

Liquid PCB wastes (power wash water) generated during work activities will be collected in polyethylene bladders and pumped to an on-site treatment system as described in Section 4.5. The wash water effluent sampling results will determine which disposal facilities can accept the waste; however, it is anticipated that if the effluent is consistently reported with PCB concentrations below  $3 \mu\text{g}/\text{L}$ , it will be transported under manifest for off-site disposal at the NewStream, LLC treatment facility in Attleboro, Massachusetts, or equivalent waste disposal facility.

PCB wastes generated during the work activities will be stored in accordance with 40 CFR 761.65, and containers will be properly labeled and marked in accordance with 40 CFR 761.40. Copies of manifests, waste shipment records, and certificates of disposal will be collected and provided as part of the final report to EPA.

#### **4.17 SITE RESTORATION**

Site restoration will be conducted as described in Section 5.14 of the Building A Plan.

#### **4.18 RECORDKEEPING AND DOCUMENTATION**

Recordkeeping and documentation will be conducted as described in Section 5.15 of the Building A Plan.

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#### **4.19 CONCEPTUAL MONITORING AND MAINTENANCE PLAN**

The conceptual monitoring and maintenance plan is described in Section 5.16 of the Building A Plan.

## 5. COMMUNICATIONS

Prior to initiation and periodically during the work activities, project-related communications with tenants and employees will be undertaken on an as-needed basis (i.e., notice of disruptive activities to particular areas) or as significant project milestones are achieved. During the remediation work at Buildings A, B, C, and X, weekly project updates were emailed by Harvard's Construction Mitigation department to all Peabody Terrace tenants. These updates included information regarding the specific work activities that would be taking place at each building during that week. In addition, tenants were notified of each of the following events by a notice delivered to their unit:

- Complex-wide update on PCB presence and plan for remediation
- Start of building remediation work
- Balcony use restrictions
- Notice of use of odor producing materials
- Notice of entry for air conditioner unit installations or removals
- Notice of end of balcony use restrictions
- General project schedule update
- Notice of weekend work

A Construction Mitigation Hotline phone number has been provided to all Peabody Terrace tenants in the event that any specific comments or questions arise during the work. The phone calls are answered and documented by Harvard Mitigation staff throughout remediation work, and any recurring issues (e.g., noise complaints, etc.) are discussed at weekly project meetings to keep the involved parties informed of these issues.

Additional information on Harvard's communications with tenants and employees undertaken in the early phases of the project before remediation work began is provided in Section 6 of the Building A Plan.



---

## 6. SCHEDULE

Remediation activities are scheduled to begin in April 2011 following approval of this plan. Given that the proposed remediation activities will be conducted in continuous occupancy residential buildings and will involve a significant amount of disruption, the remediation will occur in a phased approach. It is anticipated that the building materials remediation activities will be completed first followed by the soil removal at each respective building group.

The intent for the overall exterior façade project is to complete activities by groups of buildings. At this time, the projected schedule for completing the work is as follows:

- 2011: Buildings A, B, C, and X (remaining work not completed in 2010 – refer to the Building A, B, C, & X Status Report, February 2011)
- 2011: Buildings E, F, and Y
- 2012: Buildings D and Z

The primary reason for the inability to complete work at Buildings A, B, C and X in 2010 was due to the late start in the 2010 construction season (June). It is anticipated that by starting the Building E, F, and Y work in April 2011, the exterior building work may be completed in the fall of 2011, and the soil removal work may be completed in the late fall of 2011.

**Table 2-1**  
**Building F Child Care and Building E Common Room Interior Caulking Characterization Data**  
**Peabody Terrace, Cambridge, Massachusetts**

Media	General Location	Wipe Sample ID	Date	Detection Limit	Total PCBs	Bulk Sample ID	Date	Detection Limit	Total PCBs
<b>Building F Daycare Door or Window Caulking / Sealant Samples</b>									
Caulking	Vertical caulking joint btw window and concrete column, south wall	PTF-CWK-DC03-0096	9/28/09	0.5	ND	PTF-CBK-DC03-1137	1/31/11	0.330	ND
Caulking	Horizontal caulking joint beneath operable window, south wall, metal to metal	PTF-CWK-DC03-0101	9/28/09	0.5	ND	PTF-CBK-DC03-1138	1/31/11	1.52	<b>19.0</b>
Caulking	Vertical caulking joint along northernmost door on the eastern wall in the westernmost room, metal to metal	PTF-CWK-DC03-0114	9/28/09	0.5	ND	PTF-CBK-DC03-1139	1/31/11	1.62	<b>34.2</b>
<b>Building E Common Room Door or Window Caulking / Sealant Samples</b>									
Caulking	Vertical caulking joint btw window and concrete column, east wall, middle window	PTE-CWK-CR01-0151	9/28/09	0.5	ND	PTE-CBK-CR01-1134	1/31/11	0.300	ND
Caulking	Horizontal caulking joint beneath window, east wall, middle window	PTE-CWK-CR01-0153	9/28/09	0.5	ND	PTE-CBK-CR01-1135	1/31/11	0.260	ND
Caulking	Vertical caulking window joint on western wall in kitchen, adj to concrete column	PTE-CWK-CR01-0157	9/28/09	0.5	<b>3.3</b>	PTE-CBK-CR01-1136	1/31/11	0.300	ND

Notes:

1. All samples were extracted by USEPA Method 3540C (Soxhlet) and analyzed by USEPA Method 8082.
2. All wipe sample results are presented in micrograms per 100 cm<sup>2</sup> (ug/100 cm<sup>2</sup>).
3. All wipe samples were collected as surface wipes from a 100 cm<sup>2</sup> area using hexane-preserved wipes provided by the laboratory.
4. All bulk sample results are presented in milligrams per kilogram (mg/kg).
5. ND = Not detected above laboratory's minimum reporting limit, as indicated.
6. A **bold** concentration indicates an exceedance of one or more project-specific action levels:
  - a. The action level for interior **porous** surfaces is 3.3 ug/100cm<sup>2</sup>.

**Table 2-2**  
**Buildings E, F, Y - Balcony Level Characterization Data**  
**Peabody Terrace, Cambridge, Massachusetts**

Media	Building ID	Unit Number	Sample Date	Sample Description	Bulk Sample Result			
					Sample ID	Reporting Limit	Total PCBs	Qualifier
Balcony Slab Caulking								
Caulking	E	25-32	9/28/10	Balcony Slab Caulking (Façade/Pad Joint)	PTE-CBK-2532-0819	8,250	130,000	
Caulking	F	24-517	9/28/10	Balcony Slab Caulking (Façade/Pad Joint)	PTF-CBK-24517-0833	313	3,420	
Caulking	Y	24-1604	9/28/10	Balcony Slab Caulking (Façade/Pad Joint)	PTY-CBK-241604-0806	1,409	15,200	
Balcony Window / Door Caulking								
Caulking	E	25-32	9/28/10	Balcony Window/Door Caulking	PTE-CBK-2532-0818	32.9	219	
Caulking	F	24-517	9/28/10	Balcony Window/Door Caulking	PTF-CBK-24517-0831	16.7	181	J
Caulking	Y	24-1604	9/28/10	Balcony Window/Door Caulking	PTY-CBK-241604-0805	40.3	367	
Balcony Wall Panel Caulking								
Caulking	E	25-32	9/28/10	Vertical Façade Panel Caulking	PTE-CBK-2532-0820	75.6	1,210	
Caulking	F	24-517	9/28/10	Vertical Façade Panel Caulking	PTF-CBK-24517-0834	29.5	257	J
Balcony Pad Concrete								
Concrete	E	25-32	9/28/10	Balcony Concrete Not In Direct Contact with Caulking; 2' from building face, 2' from south edge	PTE-CBC-2532-0816	0.33	3.58	
Concrete	F	24-517	9/28/10	Balcony Concrete Not In Direct Contact with Caulking; 3.3' from building face, 7.5' from east edge	PTF-CBC-24517-0835	0.033	ND	
Concrete	Y	24-1604	9/28/10	Balcony Concrete Not In Direct Contact with Caulking - 6" from building face, 4 feet from west edge	PTY-CBC-241604-0807	2.51	24.3	
Balcony Wall Concrete								
Concrete	E	25-32	9/28/10	Vertical Façade Concrete 6.0-6.5" from Vertical Joint	PTE-CBC-2532-0817	0.033	0.245	
Concrete	F	24-517	9/28/10	Vertical Façade Concrete 6.0-6.5" from Vertical Joint	PTF-CBC-24517-0837	0.033	0.276	

**Notes:**

1. All samples were extracted by USEPA Method 3540C (Soxhlet) and analyzed by USEPA Method 8082.
2. All bulk sample results are presented in milligrams per kilogram (mg/kg).
3. ND = Not detected above laboratory's minimum reporting limit, as indicated.
4. J = Value is estimated based on data validation.

**Table 2-3**  
**Buildings E, F, Y - Patio / Doorstep Level Characterization Data**  
**Peabody Terrace, Cambridge, Massachusetts**

Media	Building ID	Unit Number	Sample Date	Sample Description	Bulk Sample Result		
					Sample ID	Reporting Limit	Total PCBs
Patio / Doorstep Slab Caulking							
Caulking	E	28-11	11/2/10	Patio Slab Caulking (Façade/Pad Joint)	PTE-CBK-2811-1015	32.7	1,257
Caulking	F	31-12	11/2/10	Doorstep Slab Caulking (Façade/Pad Joint)	PTF-CBK-3112-1014	33	1,040
Caulking	Y	24-103	11/2/10	Doorstep Slab Caulking (Façade/Pad Joint)	PTY-CBK-24103-1013	31.8	737
Patio / Doorstep Wall Panel Caulking							
Caulking	E	28-11	10/4/10	Panel Caulking (above patio joint)	PTE-CBK-2811-0860	1,620	21,100
Caulking	F	31-12	10/4/10	Panel Caulking (above doorstep joint)	PTF-CBK-3112-0862	7,227	116,000
Patio / Doorstep Pad Concrete							
Concrete	E	28-11	10/4/10	Patio Concrete Not In Direct Contact with Caulking (12" away)	PTE-CBC-2811-0859	0.033	0.381
Concrete	F	31-12	10/4/10	Doorstep Concrete Not In Direct Contact with Caulking (12" away)	PTF-CBC-3112-0861	0.033	0.257
Concrete	Y	24-103	11/2/10	Doorstep Concrete Not In Direct Contact with Caulking; 12" south of building edge; 3.5' east of western doorstep edge	PTY-CBK-24103-1012	0.033	0.073

Notes:

1. All samples were extracted by USEPA Method 3540C (Soxhlet) and analyzed by USEPA Method 8082.
2. All bulk sample results are presented in milligrams per kilogram (mg/kg).
3. ND = Not detected above laboratory's minimum reporting limit, as indicated.

**Table 2-4**  
**Buildings E, F, Y - Residential Unit Interior Characterization Data**  
**Peabody Terrace, Cambridge, Massachusetts**

Media	Building ID	Unit Number	Sample Date	Sample Description	Bulk Sample Result				Wipe Sample Result				
					Sample ID	Reporting Limit	Total PCBs	Qualifier	Sample ID	Preservative	Reporting Limit	Total PCBs	Qualifier
Interior Samples													
Caulking	E	25-32	9/28/10	Living Room Window/Door Caulking	PTE-CBK-2532-0823	16.5	136		PTE-CWK-2532-0822	Hexane	0.5	ND	
									PTE-CWK-2532-0821	Saline	0.5	ND	
Wipe	E	25-32	9/28/10	Window/Door Frame Adj to Caulking	--	--	--		PTE-CWM-2532-0826	Hexane	0.5	ND	
Wipe	E	25-32	9/28/10	Living Room Floor	--	--	--		PTE-CWT-2532-0824	Hexane	0.5	ND	
Wipe	E	25-32	9/28/10	Living Room Wall	--	--	--		PTE-CWW-2532-0825	Hexane	0.5	ND	
Caulking	F	24-517	9/28/10	Living Room Window/Door Caulking	PTF-CBK-24517-0830	7.85	38.5	J	PTF-CWK-24517-0828	Hexane	0.5	ND	J
									PTF-CWK-24517-0829	Saline	0.5	ND	
Wipe	F	24-517	9/28/10	Window/Door Frame Adj to Caulking	--	--	--		PTF-CWM-24517-0842	Hexane	0.5	ND	
Wipe	F	24-517	9/28/10	Living Room Floor	--	--	--		PTF-CWT-24517-0840	Hexane	0.5	ND	
Wipe	F	24-517	9/28/10	Living Room Wall	--	--	--		PTF-CWW-24517-0841	Hexane	0.5	ND	
Caulking	Y	24-1604	9/28/10	Living Room Window/Door Caulking	PTY-CBK-241604-0812	2.97	38.8		PTY-CWK-241604-0810	Hexane	0.5	ND	
									PTY-CWK-241604-0808	Saline	0.5	ND	
Wipe	Y	24-1604	9/28/10	Window/Door Frame Adj to Caulking	--	--	--		PTY-CWM-241604-0813	Hexane	0.5	ND	
Wipe	Y	24-1604	9/28/10	Living Room Floor	--	--	--		PTY-CWT-241604-0809	Hexane	0.5	ND	
Wipe	Y	24-1604	9/28/10	Living Room Wall	--	--	--		PTY-CWW-241604-0811	Hexane	0.5	ND	

Notes:

1. All bulk and surface wipe samples were extracted by USEPA Method 3540C (Soxhlet) and analyzed by USEPA Method 8082.
2. All bulk sample results are presented in milligrams per kilogram (mg/kg).
3. All wipe sample results are presented in micrograms per 100 square centimeters (ug/100cm<sup>2</sup>).
4. ND = Not detected above laboratory's minimum reporting limit, as indicated.
5. J = Value is estimated based on data validation.

**Table 2-5**  
**Buildings E, F, Y - Indoor Air Characterization Data**  
**Peabody Terrace, Cambridge, Massachusetts**

Bulk Caulking Sample Result (mg/kg)	Air Sample ID	Sample Description	Sample Date	PCB Concentration (ng/cartridge)	Flow Rate (L/Minute)	Duration (minutes)	Corrected Sample Volume (m <sup>3</sup> )	PCB Concentration (ng/m <sup>3</sup> )	Qualifier
<b>Residential Unit Indoor Air</b>									
136.0	PTE-CAR-2532-0827	Building E Unit 25-32 Living Room (Studio)	9/28/2010	96.7	2.50	121	0.292	331.7	J
	PTE-CAR-2532-1140		2/4/2011	32.4	2.57	120	0.306	106.0	
38.5	PTF-CAR-24517-0839	Building F Unit 24-517 Living Room	9/28/2010	41.3	2.53	123	0.299	138.0	J
38.8	PTY-CAR-241604-0814	Building Y Unit 24-1604 Living Room	9/28/2010	34.2	2.51	121	0.293	116.7	J
--	PTE-CAR-2722-0977	Building E Unit 27-22 One-Bedroom Apt	10/21/2010	24.6	2.47	127	0.306	80.5	
--	PTE-CAR-24417-0978	Building E Unit 24-417 One Room Studio	10/21/2010	15.2	2.50	120	0.292	52.1	
<b>Outdoor Air (Background)</b>									
N/A	PTE-CAR-W-0815	Courtyard 78' West of Bldg E 94' North of Bldg F	9/28/2010	< 5.0	2.46	120	0.286	< 17.5	J

**Notes:**

- Air samples collected in accordance with USEPA Compendium Method TO-10A and submitted for laboratory analysis of PCBs homologs.
- The flow rate displayed is the average flow rate as measured at the beginning and end of the sampling period.
- Sample volume is corrected to standard temperature and pressure in accordance with Section 13.1.7 of Method TO-10A.
- Average weather conditions during the sampling period on September 28, 2010 were 23°C and 756 mmHg (outdoor), and 25°C and 756 mmHg (indoor); the average weather conditions during the sampling period on October 21, 2010 were 14°C and 756 mmHg (outdoor), and 21°C and 750 mmHg (indoor); the average weather conditions during the sampling period on February 4, 2011 were -9°C and 766 mmHg (outdoor), and 21°C and 761 mmHg (indoor).
- Total PCB concentration is the total PCB homologs reported by the lab (ng/cartridge) per sample volume (m<sup>3</sup>/cartridge).
- "<" indicates that samples were reported below the laboratory's minimum detection limit.
- J = indicates the result is estimated based on data validation.

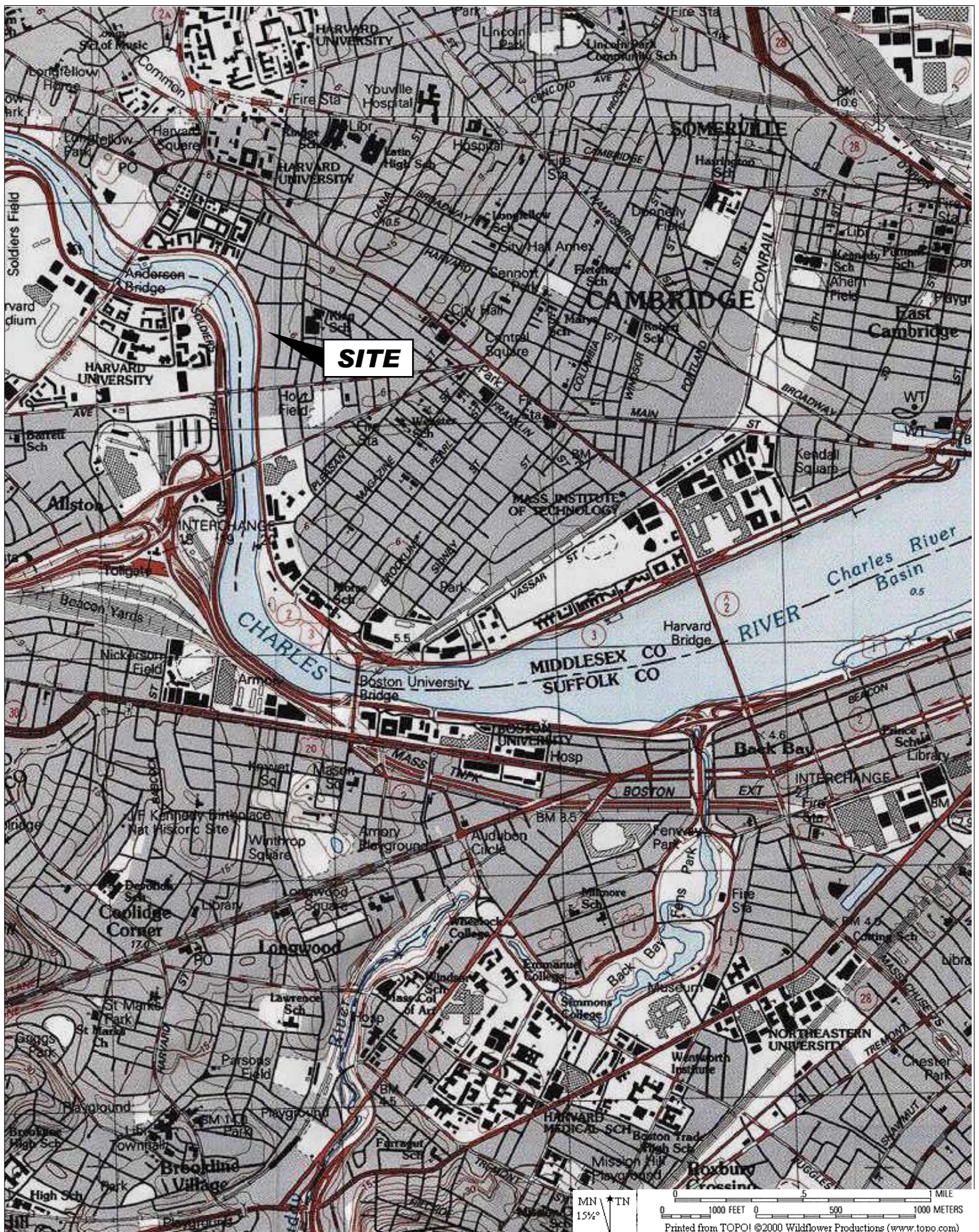
**Table 2-6**  
**Buildings E, F, Y - Façade Characterization Data**  
**Peabody Terrace, Cambridge, Massachusetts**

Media	Building ID	Unit Number	Sample Date	Sample Description	Bulk Sample Result		
					Sample ID	Reporting Limit	Total PCBs
Façade Panel Caulking							
Caulking	E	North	9/29/10	Vertical Façade Panel Caulking	PTE-CBK-N-0847	1,693	18,100
Caulking	Y	South	10/4/10	Vertical Façade Panel Caulking	PTY-CBK-S-0865	301	6,290
Façade Panel Concrete							
Concrete	E	East	9/29/10	Exposed Façade Concrete 6.0-6.5" below Horizontal Joint	PTE-CBC-E-0848	0.033	0.163
Concrete	E	East	9/29/10	Exposed Façade Concrete 12.0-12.5" below Horizontal Joint (same joint as above)	PTE-CBC-E-0849	0.033	0.107
Concrete	Y	North	9/29/10	Exposed façade concrete 6.0-6.5" below lower horizontal joint between 1st and 2nd floors; 35' from eastern building edge	PTY-CBC-N-0850	0.033	0.222
Concrete	Y	North	9/29/10	Exposed façade concrete 12.0-12.5" below horizontal joint (same joint as above); 35' from eastern building edge	PTY-CBC-N-0851	0.033	0.107
Concrete	Y	East	10/4/10	Random Concrete Location from Façade without Caulking; 9.6' south of NE building corner, 4.4' above ground surface	PTY-CBC-E-0863	0.033	ND
Concrete	Y	South	10/4/10	Vertical Façade Concrete 6.0-6.5" from Vertical Joint; 4.5' above ground surface, 6.9' east of SW building corner	PTY-CBC-S-0864	0.033	0.149

Notes:

1. All samples were extracted by USEPA Method 3540C (Soxhlet) and analyzed by USEPA Method 8082.
2. All bulk sample results are presented in milligrams per kilogram (mg/kg).
3. ND = Not detected above laboratory's minimum reporting limit, as indicated.





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Andover, MA 01810  
COMMITMENT & INTEGRITY DRIVE RESULTS

**PEABODY TERRACE  
CAMBRIDGE, MASSACHUSETTS  
REMEDIATION PLAN**

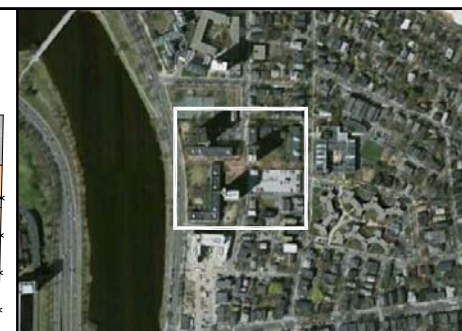
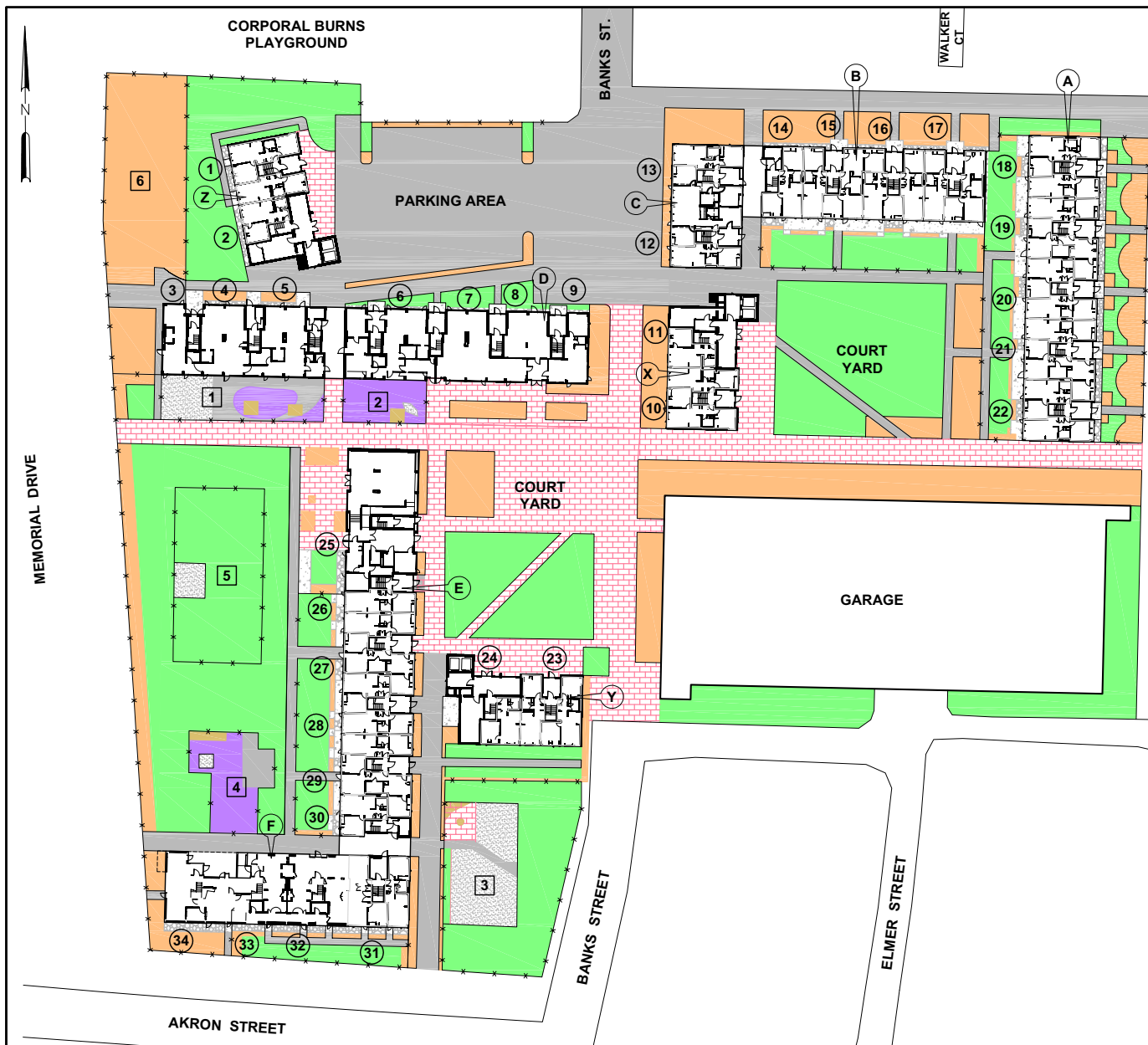
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DATE: January 2011  
JOB NO.: 210980  
FILE: Figure 1-1.cnv

**SITE LOCUS**

DES.BY: EVR  
DR.BY: EVR  
CK.BY: JAH

**1-1**





#### LEGEND

- A BUILDING IDENTIFIER
- 1 PLAY AREA IDENTIFIER
- 1 BUILDING ENTRY
- FENCE
- ASPHALT
- DIRT
- GRASS
- PLAY SAND
- MULCH
- ARTIFICIAL SURFACE (RUBBER OR TURF)
- BRICKS
- CONCRETE
- STONE

NOTE: WOODARD & CURRAN HAS ADAPTED THIS SITE PLAN TO REFLECT THE APPROXIMATE LOCATIONS OF VARIOUS GROUND SURFACES BETWEEN BUILDINGS. THE BUILDING PLAN WAS ORIGINALLY DEVELOPED BY SIMPSON GUMPERTZ & HEGER ON BEHALF OF HARVARD REAL ESTATE SERVICES, AND IS NOT TO BE REDISTRIBUTED WITHOUT EXPRESS PERMISSION FROM HARVARD REAL ESTATE SERVICES.

0 60 120  
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#### SITE PLAN

PEABODY TERRACE  
CAMBRIDGE, MASSACHUSETTS

REMEDIATION PLAN

JOB NO: 210980  
DATE: January 2011  
SCALE: AS NOTED

FIGURE 1-2





0 10 20  
SCALE IN FEET

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[illegible]

PEABODY TERRACE  
CAMBRIDGE, MASSACHUSETTS

BUILDING E, F, Y PCB REMEDIATION  
PLAN MODIFICATION

JOB NO.: 210980
DATE: JANUARY 20
SCALE: AS NOTED
SHEET: OF

FIGURE 2-3

LEGEND

- 0835 ● INDIRECT BALCONY CONCRETE SAMPLE
- 0834 ● CAULKING SAMPLE
- 0837 ● INDIRECT CONTACT FACADE CONCRETE SAMPLE
- 0861 ● INDIRECT PATIO/DOORSTEP CONCRETE SAMPLE

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## **APPENDIX A: PHOTOGRAPHS**



Photo Number: 1

Building E east façade

Photo Date: November 2009



Photo Number: 2

Building E north façade

Photo Date: November 2009





Photo Number: 3

Building E south/Building F south  
façade

Photo Date: November 2009



Photo Number: 4

Building E west façade

Photo Date: November 2009





Photo Number: 5

Building F north façade

Photo Date: November 2009



Photo Number: 6

Building F west façade

Photo Date: November 2009

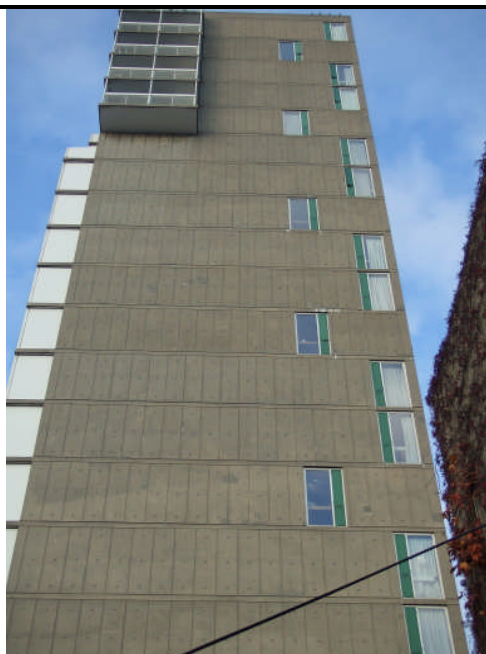


Photo Number: 7

Building Y east façade

Photo Date: November 2009



Photo Number: 8

Building Y north façade

Photo Date: November 2009





Photo Number: 9

Building Y south façade

Photo Date: November 2009



Photo Number: 10

Building Y west façade

Photo Date: November 2009

## **APPENDIX B: LABORATORY ANALYTICAL REPORTS**

October 6, 2010

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

**RE: Analytical Results Case Narrative  
Analytics # 67904  
Peabody Terrace Proj.# 210980**

Dear Ms. Wallace;

Enclosed please find the analytical results for samples submitted for the above-mentioned project. The attached Cover Page lists the sample IDs, Lab tracking numbers and collection dates for the samples included in this deliverable.

Samples were analyzed for Polychlorinated Biphenyls (PCBs) by EPA Method 8082.

Unless otherwise noted in the Non-conformance Summary listed below, all of the quality control (QC) criteria including initial calibration, calibration verification, surrogate recovery, holding time and method accuracy/precision for these analyses were within acceptable limits.

This Level II data package has been assembled in the following order:

- Case Narrative/Non-Conformance Summary
- Sample Log Sheet - Cover Page
- PCB Form 1 Data Sheet for Samples and Blanks
- Chromatograms
- PCB Form 10 Confirmation Results
- PCB Form 3 MS/MSD (LCS) Recoveries
- Chain of Custody (COC) Forms

## QC NON-CONFORMANCE SUMMARY

### Sample Receipt:

No exceptions.

### PCBs by EPA Method 8082:

No results were reported below the quantitation limit.

Samples 67904-1 thru 67904-3, 67904-8, 67904-10 thru 67904-14, 67904-17, 67904-23 thru 67904-27 required dilution due to matrix interference or the concentrations of PCBs detected in the sample.

Sample 67904-35 had low recovery of Decachlorobiphenyl (DCB) recovery on column#2. Column#1 was in control for both surrogates. Results were reported without qualification.

The MS/MSD's extracted on samples 67904-8 and 67904-27 were not analyzed as the parents samples required dilution due to the concentrations of PCBs detected in the samples.

The closing continuing calibration standard (file#M31227SC) had low recovery for PCB 1254. The standard was reanalyzed (file# M31229SC) with all analytes in control. Results were reported without qualification.

The closing continuing calibration standard (file#M31253SC) had low recovery for PCB 1254. The standard was reanalyzed (file# M31255SC) with all analytes in control. Results were reported without qualification.

If you have any questions on these results, please do not hesitate to contact me.

Sincerely,  
ANALYTICS Environmental Laboratory, LLC



Stephen L. Knollmeyer  
Laboratory Director

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

**Report Number: 67904**

**Revision: Rev. 0**

**Re: Peabody Terrace (Project No: 210980)**

Enclosed are the results of the analyses on your sample(s). Samples were received on 29 September 2010 and analyzed for the tests listed. Samples were received in acceptable condition, with the exceptions noted below or on the chain of custody. These results pertain to samples as received by the laboratory and for the analytical tests requested on the chain of custody. The results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. Please see individual reports for specific methodologies and references.

**Sample Analysis:** The attached pages detail the Client Sample IDs, Lab Sample IDs, and Analyses requested

**Sample Receipt Exceptions:** None

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, Virginia, Maryland, and is accredited by the Department of Defense (DOD) ELAP program. A list of actual certified parameters is available upon request.

If you have any questions on these results, please do not hesitate to contact us.

Authorized signature

  
Stephen L. Knollmeyer Lab. Director

Date

10/06/2010

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**CLIENT: Woodard & Curran**

**REPORT NUMBER: 67904**

**REV: Rev. 0**

**PROJECT: Peabody Terrace (Project No: 210980)**

<u>Lab Number</u>	<u>Sample Date</u>	<u>Station Location</u>	<u>Analysis</u>	<u>Comments</u>
67904-1	09/28/10	PTY-CBK-241604-0805	EPA 8082 (PCBs only)	
67904-2	09/28/10	PTY-CBK-241604-0806	EPA 8082 (PCBs only)	
67904-3	09/28/10	PTY-CBC-241604-0807	EPA 8082 (PCBs only)	
67904-4	09/28/10	PTY-CWK-241604-0808	EPA 8082 (PCBs only)	
67904-5	09/28/10	PTY-CWT-241604-0809	EPA 8082 (PCBs only)	
67904-6	09/28/10	PTY-CWK-241604-0810	EPA 8082 (PCBs only)	
67904-7	09/28/10	PTY-CWW-241604-0811	EPA 8082 (PCBs only)	
67904-8	09/28/10	PTY-CBK-241604-0812	EPA 8082 (PCBs only)	
67904-9	09/28/10	PTY-CWM-241604-0813	EPA 8082 (PCBs only)	
67904-10	09/28/10	PTE-CBC-2532-0816	EPA 8082 (PCBs only)	
67904-11	09/28/10	PTE-CBC-2532-0817	EPA 8082 (PCBs only)	
67904-12	09/28/10	PTE-CBK-2532-0818	EPA 8082 (PCBs only)	
67904-13	09/28/10	PTE-CBK-2532-0819	EPA 8082 (PCBs only)	
67904-14	09/28/10	PTE-CBK-2532-0820	EPA 8082 (PCBs only)	
67904-15	09/28/10	PTE-CWK-2532-0821	EPA 8082 (PCBs only)	
67904-16	09/28/10	PTE-CWK-2532-0822	EPA 8082 (PCBs only)	
67904-17	09/28/10	PTE-CBK-2532-0823	EPA 8082 (PCBs only)	
67904-18	09/28/10	PTE-CWT-2532-0824	EPA 8082 (PCBs only)	
67904-19	09/28/10	PTE-CWW-2532-0825	EPA 8082 (PCBs only)	
67904-20	09/28/10	PTE-CWM-2532-0826	EPA 8082 (PCBs only)	
67904-21	09/28/10	PTF-CWK-24517-0828	EPA 8082 (PCBs only)	
67904-22	09/28/10	PTF-CWK-24517-0829	EPA 8082 (PCBs only)	
67904-23	09/28/10	PTF-CBK-24517-0830	EPA 8082 (PCBs only)	
67904-24	09/28/10	PTF-CBK-24517-0831	EPA 8082 (PCBs only)	
67904-25	09/28/10	PTF-CBKD-24517-0832	EPA 8082 (PCBs only)	
67904-26	09/28/10	PTF-CBK-24517-0833	EPA 8082 (PCBs only)	
67904-27	09/28/10	PTF-CBK-24517-0834	EPA 8082 (PCBs only)	
67904-28	09/28/10	PTF-CBC-24517-0835	EPA 8082 (PCBs only)	
67904-29	09/28/10	PTF-CBCD-24517-0836	EPA 8082 (PCBs only)	
67904-30	09/28/10	PTF-CBC-24517-0837	EPA 8082 (PCBs only)	
67904-31	09/28/10	PTF-CWKD-24517-0838	EPA 8082 (PCBs only)	
67904-32	09/28/10	PTF-CWW-24517-0841	EPA 8082 (PCBs only)	
67904-33	09/28/10	PTF-CWM-24517-0842	EPA 8082 (PCBs only)	
67904-34	09/28/10	PTF-CWT-24517-0840	EPA 8082 (PCBs only)	
67904-35	09/28/10	PTF-CBCQ-24517-0843	EPA 8082 (PCBs only)	
67904-36	09/28/10	PTF-CWKQ-24517-0844	Electronic Data Deliverable	
	09/28/10	PTF-CWKQ-24517-0844	EPA 8082 (PCBs only)	



## MassDEP Analytical Protocol Certification Form

Laboratory Name: Analytics Environmental Laboratory, LLC

Project #: 67904

Project Location: Peabody Terrace

RTN:

**This Form provides certifications for the following data set. Laboratory Sample ID Number(s):**

67904-1 through 67904-36

Matrices: ☐ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☒ Other

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input type="checkbox"/>	7470/7471 Hg CAM III B <input type="checkbox"/>	MassDEP VPH CAM IV A <input type="checkbox"/>	8081 Pesticides CAM V B <input type="checkbox"/>	7196 Hex Cr CAM VI B <input type="checkbox"/>	MassDEP APH CAM IX A <input type="checkbox"/>
8270 SVOC CAM II B <input type="checkbox"/>	7010 Metals CAM III C <input type="checkbox"/>	MassDEP EPH CAM IV B <input type="checkbox"/>	8151 Herbicides CAM V C <input type="checkbox"/>	8330 Explosives CAM VIII A <input type="checkbox"/>	TO-15 VOC CAM IX B <input type="checkbox"/>
6010 Metals CAM III A <input type="checkbox"/>	6020 Metals CAM III D <input type="checkbox"/>	8082 PCB CAM V A <input checked="" type="checkbox"/>	9014 Total Cyanide/PAC CAM VI A <input type="checkbox"/>	6860 Perchlorate CAM VIII B <input type="checkbox"/>	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>D</b>	Does the laboratory report comply with all reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>E</b>	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <sup>1</sup>
----------	-----------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------

**Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.**

<b>H</b>	Were ALL QC performance standards specified in the CAM protocol(s) achieved?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>

<sup>1</sup> All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature: M. Gulli Position: Assistant Laboratory Director

Printed Name: Melissa Gulli

Date: October 06, 2010

### Surrogate Compound Limits

	Matrix: Units:	Aqueous % Recovery	Solid % Recovery	Method
Volatile Organic Compounds - Drinking Water				
1,4-Difluorobenzene		70-130		EPA 524.2
Bromofluorobenzene		70-130		
1,2-Dichlorobenzene-d4		70-130		
Volatile Organic Compounds				
1,2-Dichloroethane-d4		70-120	70-120	EPA 624/8260B
Toluene-d8		85-120	85-120	
Bromofluorobenzene		75-120	75-120	
Semi-Volatile Organic Compounds				
2-Fluorophenol		20-110	35-105	EPA 625/8270C
d5-Phenol		15-110	40-100	
d5-nitrobenzene		40-110	35-100	
2-Fluorobiphenyl		50-110	45-105	
2,4,6-Tribromophenol		40-110	40-125	
d14-p-terphenyl		50-130	30-125	
PAH's by SIM				
d5-nitrobenzene		21-110	35-110	EPA 8270C
2-Fluorobiphenyl		36-121	45-105	
d14-p-terphenyl		33-141	30-125	
Pesticides and PCBs				
2,4,5,6-Tetrachloro-m-xylene (TCX)		46-122	40-130	EPA 608/8082
Decachlorobiphenyl (DCB)		40-135	40-130	
Herbicides				
Dichloroacetic acid (DCAA)		30-150	30-150	
Gasoline Range Organics/TPH Gasoline				
Trifluorotoluene TFT (FID)		60-140	60-140	MEDEP 4217/EPA 8015
Bromofluorobenzene (BFB) (FID)		60-140	60-140	
Trifluorotoluene TFT (PID)		60-140	60-140	
Bromofluorobenzene (BFB) (PID)		60-140	60-140	
Diesel Range Organics/TPH Diesel				
m-terphenyl		60-140	60-140	MEDEP 4125/EPA 8015/CT ETPH
Volatile Petroleum Hydrocarbons				
2,5-Dibromotoluene (PID)		70-130	70-130	MADEP VPH May 2004 Rev1.1
2,5-Dibromotoluene (FID)		70-130	70-130	
Extracatable Petroleum Hydrocarbons				
1-chloro-octadecane (aliphatic)		40-140	40-140	MADEP EPH May 2004 Rev1.1
o-Terphenyl (aromatic)		40-140	40-140	
2-Fluorobiphenyl (Fractionation)		40-140	40-140	
2-Bromonaphthalene (fractionation)		40-140	40-140	

## PCB DATA SUMMARIES

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**  
**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** Lab QC

**Lab Sample ID:** B100110PW  
**Matrix:** Aqueous  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:**  
**Lab Receipt Date:**  
**Extraction Date:** 10/01/10  
**Analysis Date:** 10/04/10

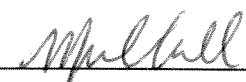
PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit µg/L	Results µg/L
PCB-1016	0.2	U
PCB-1221	0.2	U
PCB-1232	0.2	U
PCB-1242	0.2	U
PCB-1248	0.2	U
PCB-1254	0.2	U
PCB-1260	0.2	U
PCB-1262	0.2	U
PCB-1268	0.2	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	102 %	
Decachlorobiphenyl	75 %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

COMMENTS:

PCB EXT Report

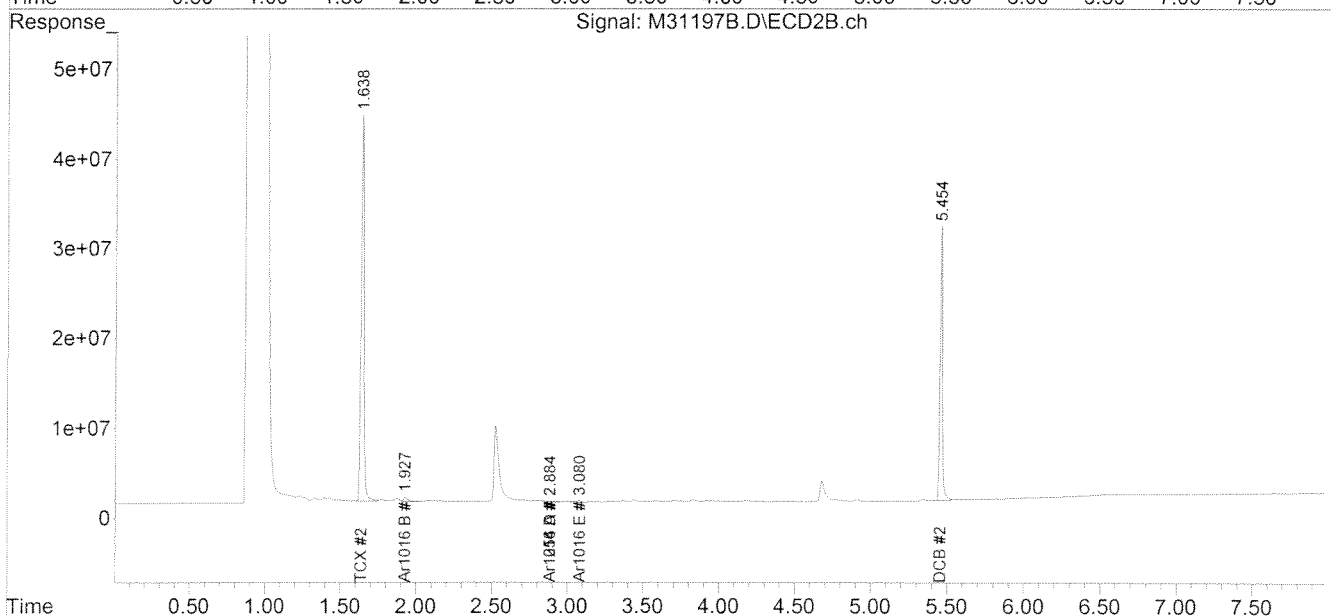
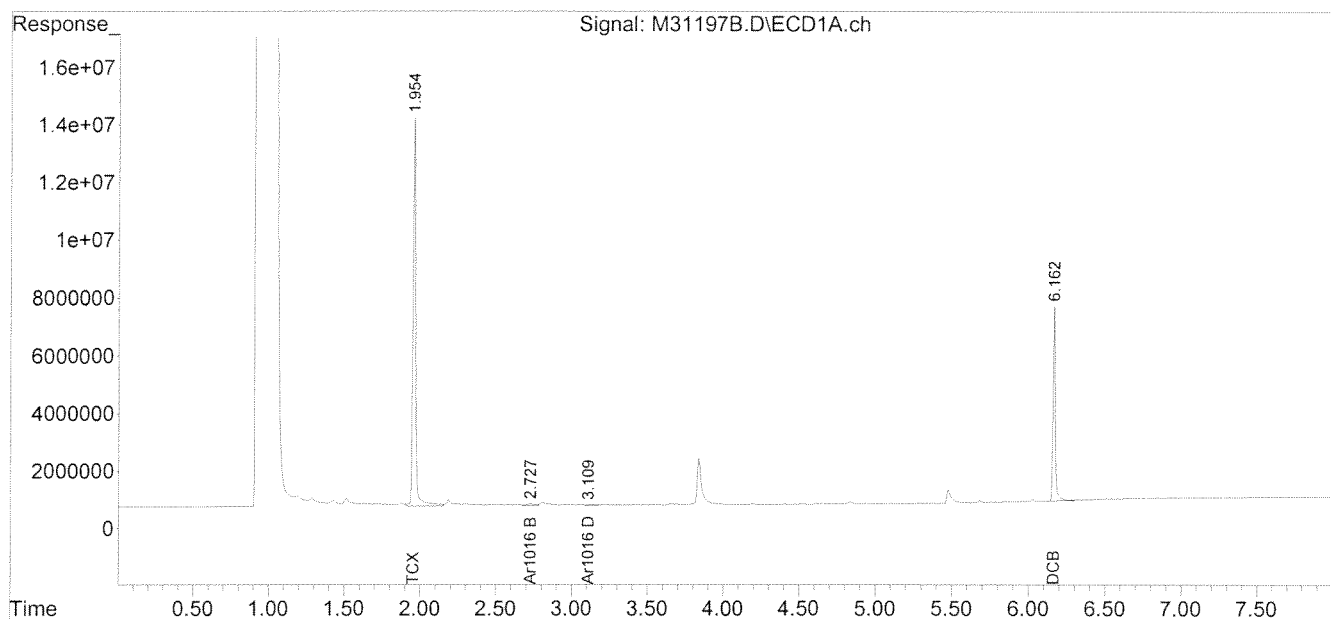
Authorized signature



Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31197B.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 12:47 pm  
Operator : JK  
Sample : B100110PW  
Misc :  
ALS Vial : 6 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 04 13:45:46 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**  
**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** Lab QC

**Lab Sample ID:** B092910PSOX  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:**  
**Lab Receipt Date:**  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b>Surrogate Standard Recovery</b>		
2,4,5,6-Tetrachloro-m-xylene	93	%
Decachlorobiphenyl	73	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

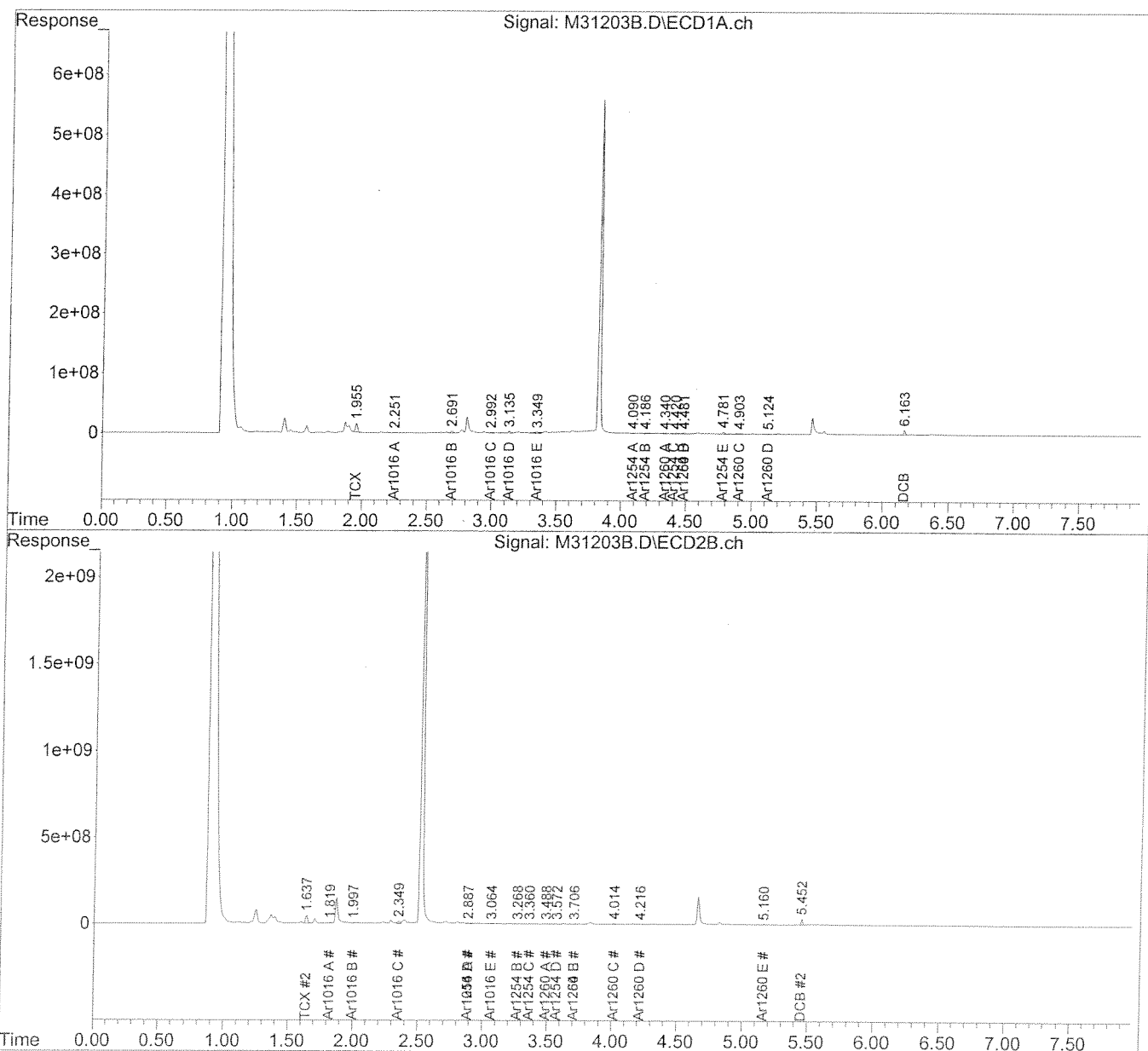
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31203B.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 1:56 pm  
Operator : JK  
Sample : B092910PSOX,,A/C  
Misc : SOIL  
ALS Vial : 6 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 08:32:32 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:18 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**  
**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** Lab QC

**Lab Sample ID:** B092910PSOX2  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:**  
**Lab Receipt Date:**  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b>Surrogate Standard Recovery</b>		
2,4,5,6-Tetrachloro-m-xylene	94	%
Decachlorobiphenyl	72	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

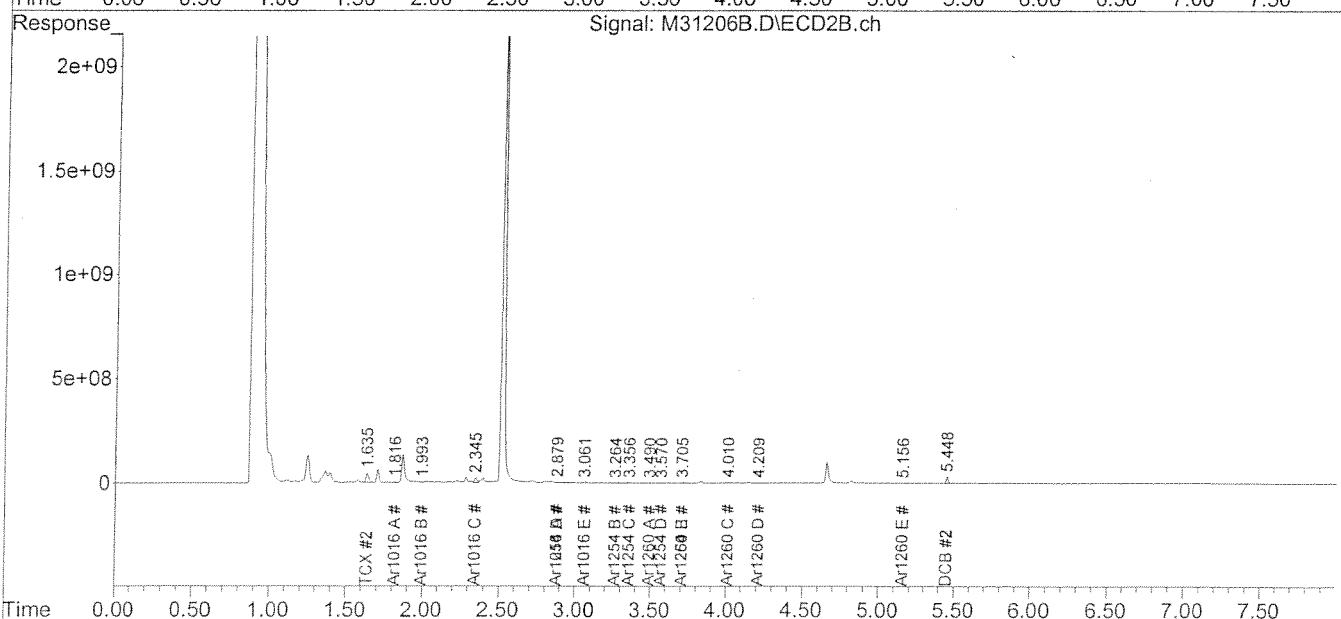
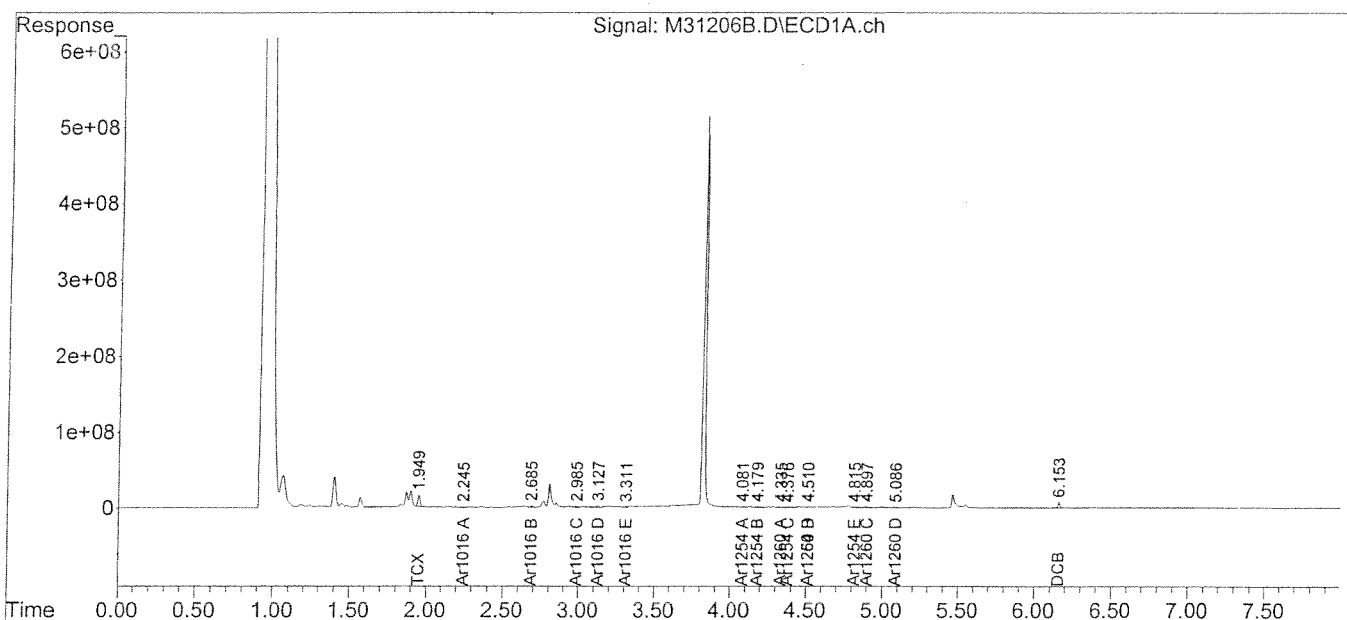


Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31206B.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 2:27 pm  
Operator : JK  
Sample : B092910PSOX2,,A/C  
Misc : SOIL  
ALS Vial : 9 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 08:38:32 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

OK  
10-05-10



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** Lab QC

**Lab Sample ID:** B092910PSOX RR  
**Matrix:** Soil  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:**  
**Lab Receipt Date:**  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	93	%
Decachlorobiphenyl	74	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

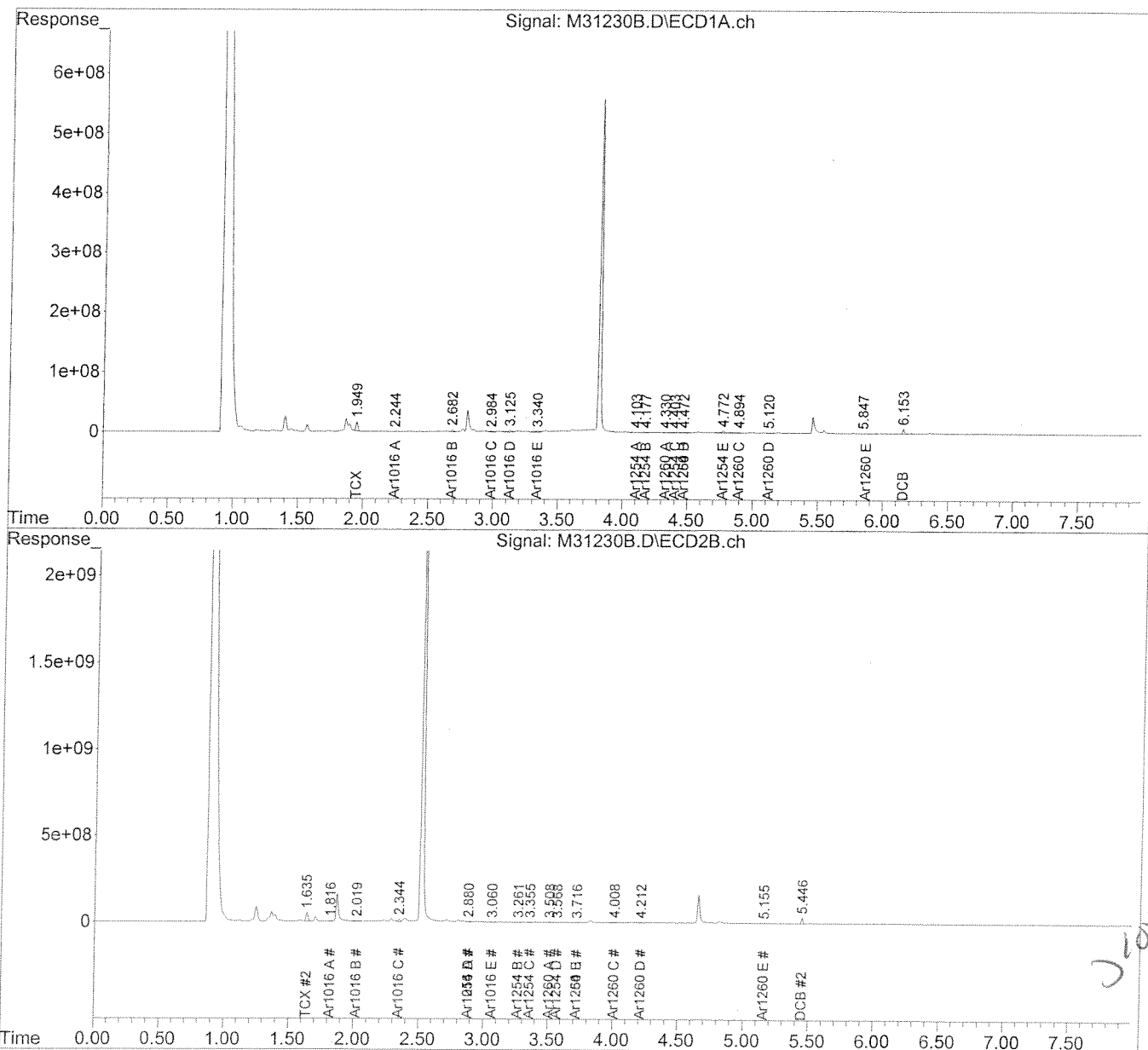
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31230B.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 6:33 pm  
Operator : JK  
Sample : B092910PSOX,RR,,A/C  
Misc : SOIL  
ALS Vial : 6 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 09:26:48 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:18 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** Lab QC

**Lab Sample ID:** B092910PSOX2 RR  
**Matrix:** Soil  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:**  
**Lab Receipt Date:**  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	95	%
Decachlorobiphenyl	72	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

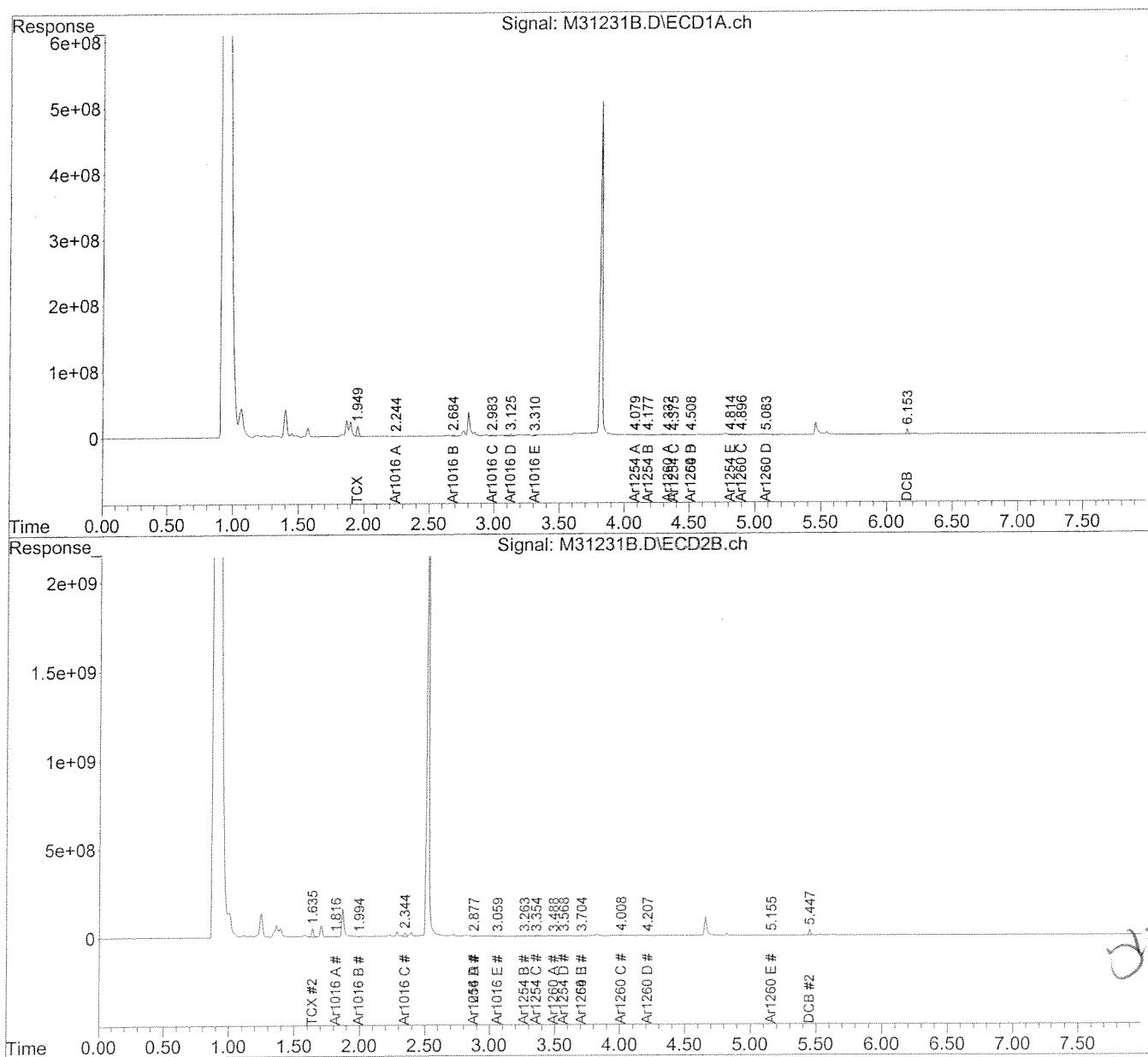
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31231B.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 6:43 pm  
Operator : JK  
Sample : B092910PSOX2,RR,,A/C  
Misc : SOIL  
ALS Vial : 9 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 09:27:15 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** Lab QC

**Lab Sample ID:** B093010PSOX RR  
**Matrix:** Soil  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:**  
**Lab Receipt Date:**  
**Extraction Date:** 09/30/10  
**Analysis Date:** 10/05/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	107	%
Decachlorobiphenyl	75	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

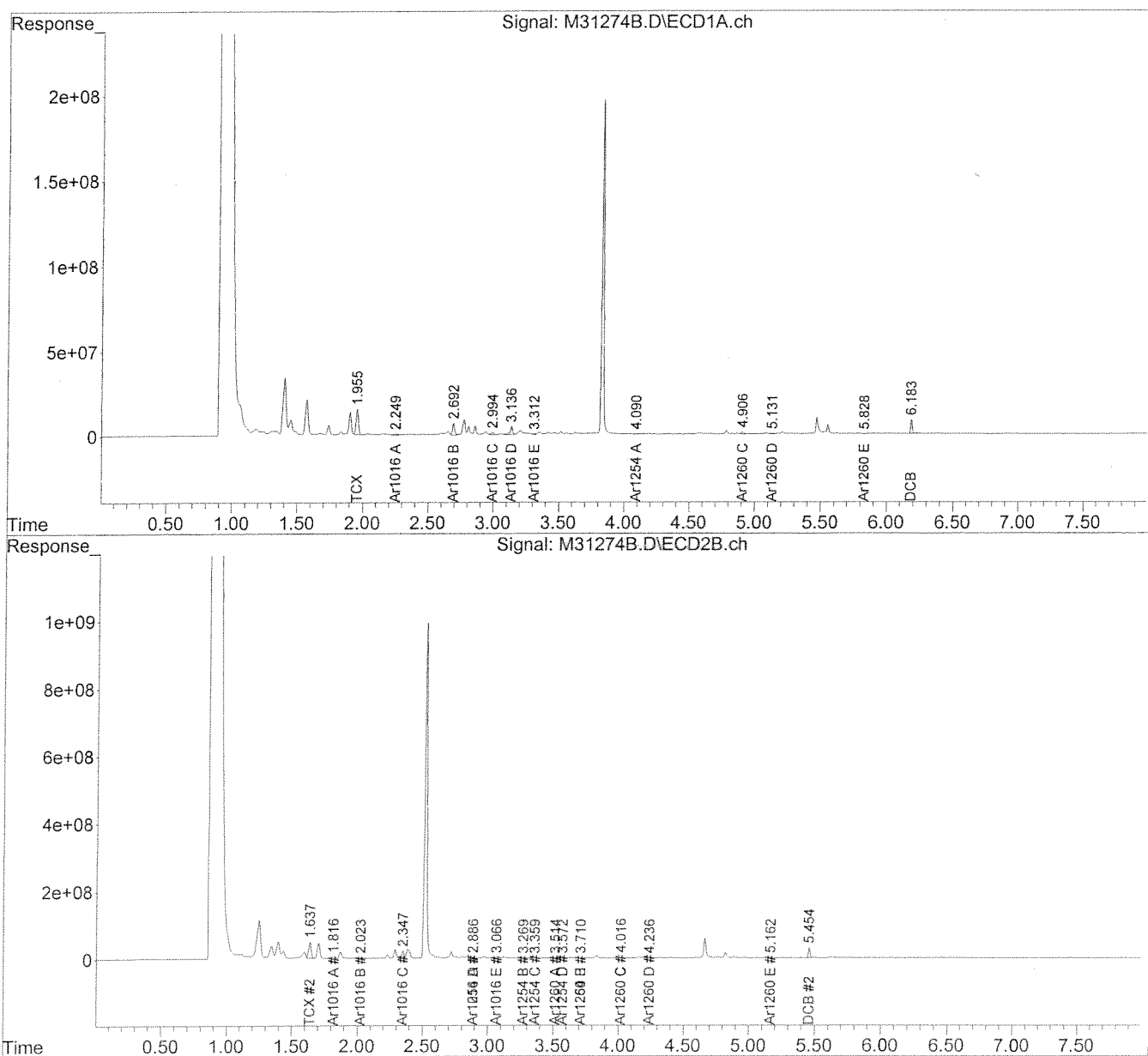
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31274B.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 5 Oct 2010 10:26 am  
Operator : JK  
Sample : B093010PSOX,RR,,A/C  
Misc : SOIL  
ALS Vial : 49 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 14:45:55 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:18 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

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**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTY-CBK-241604-0805

**Lab Sample ID:** 67904-1  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 1220  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	40300	U
PCB-1221	40300	U
PCB-1232	40300	U
PCB-1242	40300	U
PCB-1248	40300	U
PCB-1254	40300	<b>367000</b>
PCB-1260	40300	U
PCB-1262	40300	U
PCB-1268	40300	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.



PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 67904
GC Column #1: STX-CLPesticides I	Sample: 67904-1,1:200,,A/C
Column ID: 0.25 mm	Data File: M31232.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 1221.9
Column ID: 0.25 mm	

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	337734	366944	8.3	

# Column to be used to flag RPD values greater than QC limit of 40%

\* Values outside QC limits

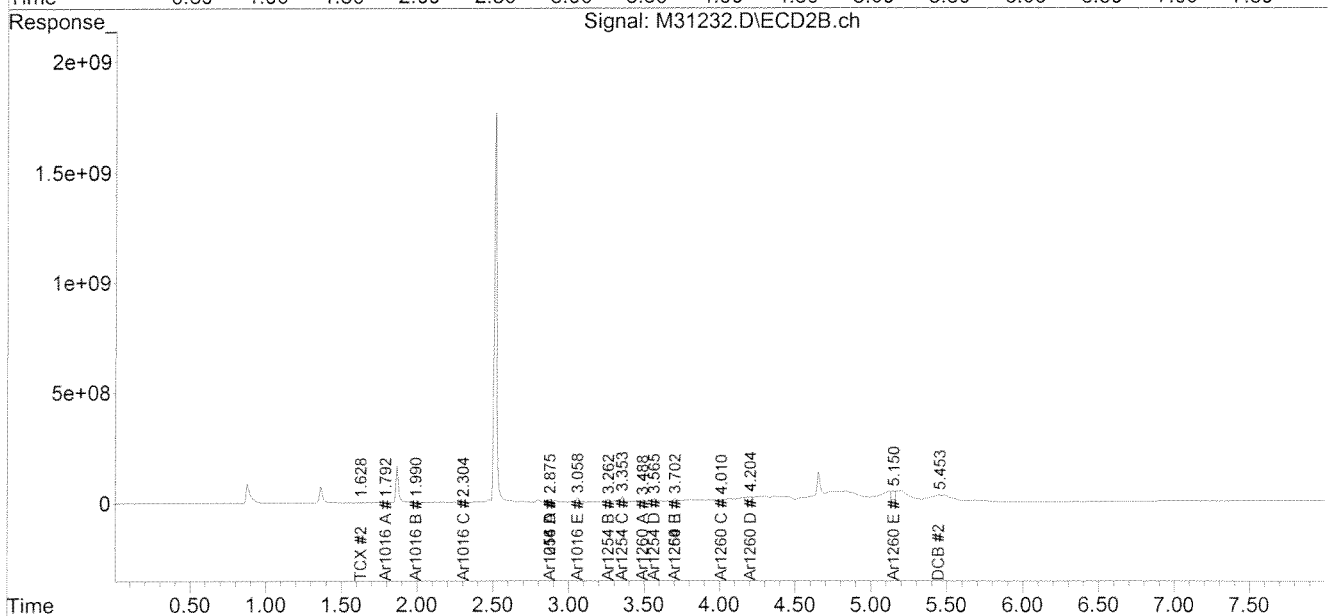
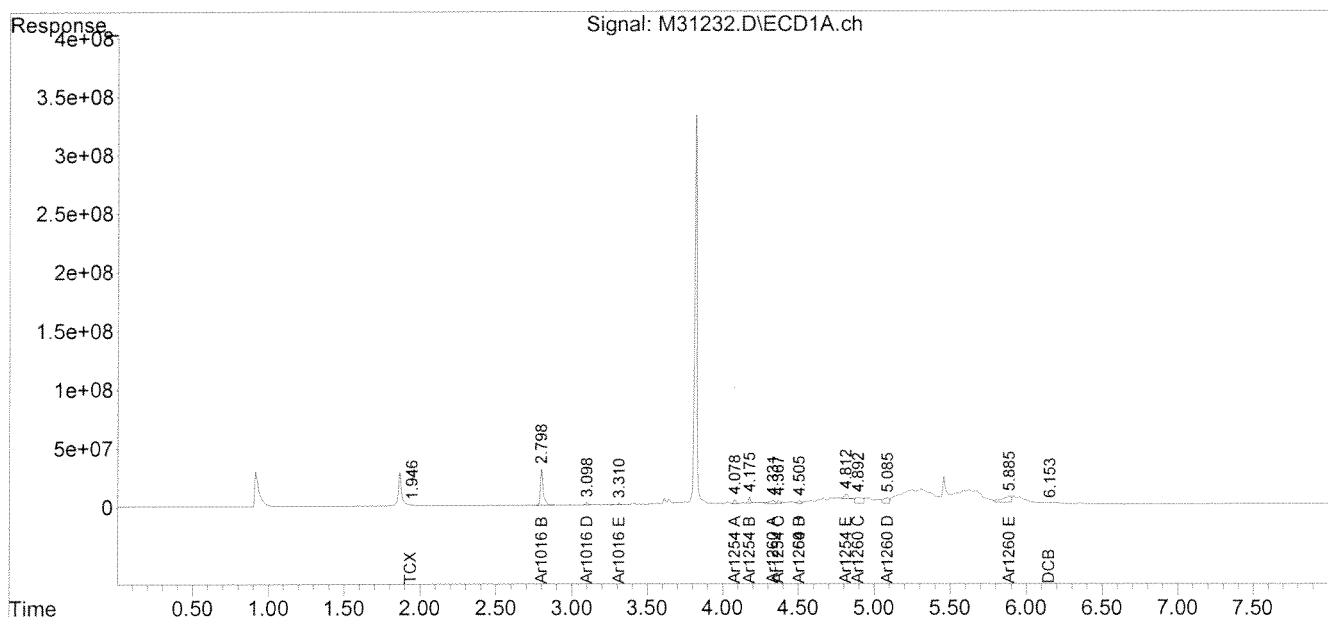
Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31232.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 6:53 pm  
Operator : JK  
Sample : 67904-1,1:200,,A/C  
Misc : SOIL  
ALS Vial : 29 Sample Multiplier: 1

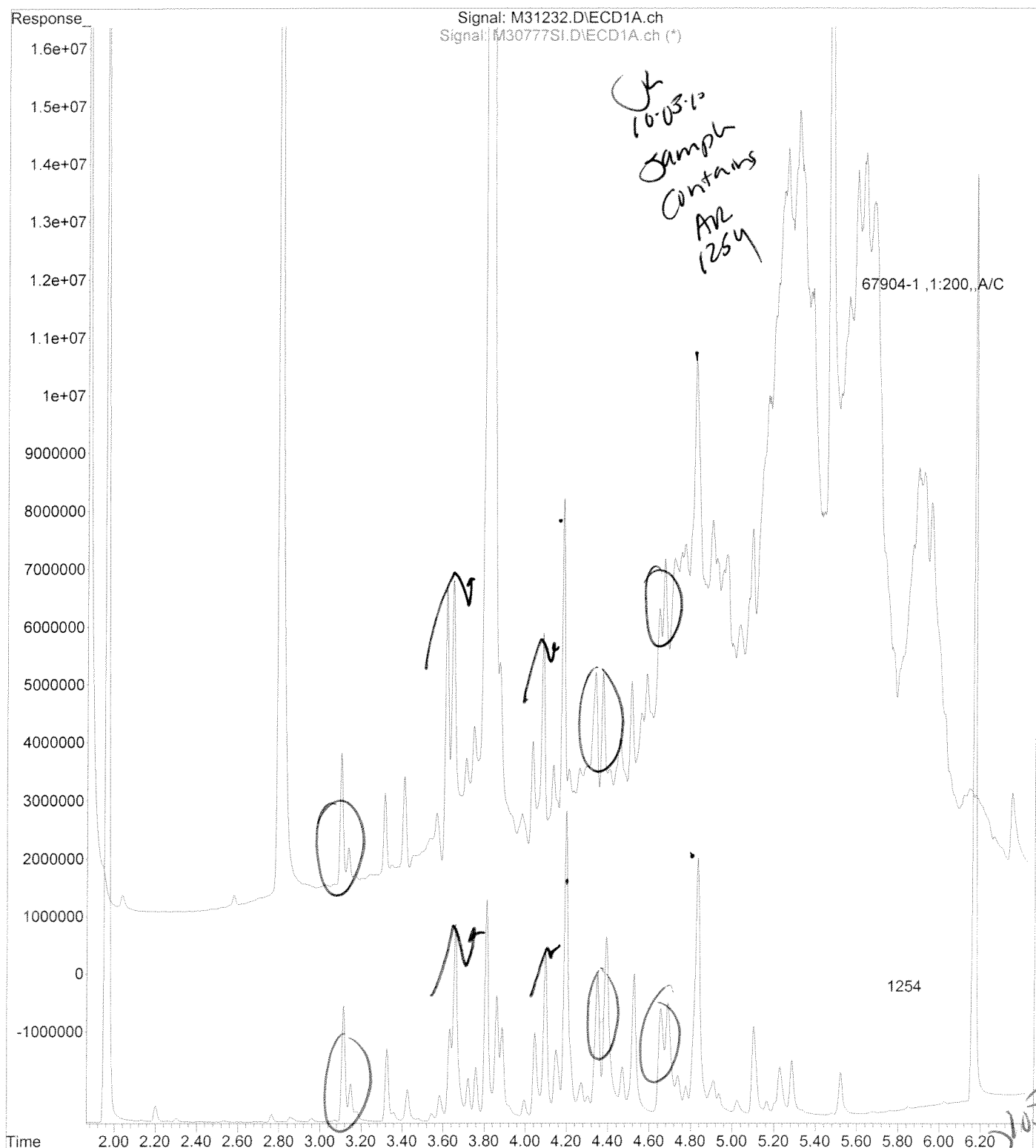
Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 09:29:08 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

JK  
10-05-10



File :C:\msdchem\1\DATA\100410-M\M31232.D  
Operator : JK  
Acquired : 4 Oct 2010 6:53 pm using AcqMethod PEST.M  
Instrument : Instrument M  
Sample Name: 67904-1,1:200,,A/C  
Misc Info : SOIL  
Vial Number: 29



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

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**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTY-CBK-241604-0806

**Lab Sample ID:** 67904-2  
**Matrix:** Solid  
**Percent Solid:** 98  
**Dilution Factor:** 42700  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	1409000	U
PCB-1221	1409000	U
PCB-1232	1409000	U
PCB-1242	1409000	U
PCB-1248	1409000	U
PCB-1254	1409000	<b>15200000</b>
PCB-1260	1409000	U
PCB-1262	1409000	U
PCB-1268	1409000	U
<b>Surrogate Standard Recovery</b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 67904
GC Column #1: STX-CLPesticides I	Sample: 67904-2,1:5000,,A/C
Column ID: 0.25 mm	Data File: M31233.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 42704.3
Column ID: 0.25 mm	

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	15227418	15045117	1.2	

# Column to be used to flag RPD values greater than QC limit of 40%

\* Values outside QC limits

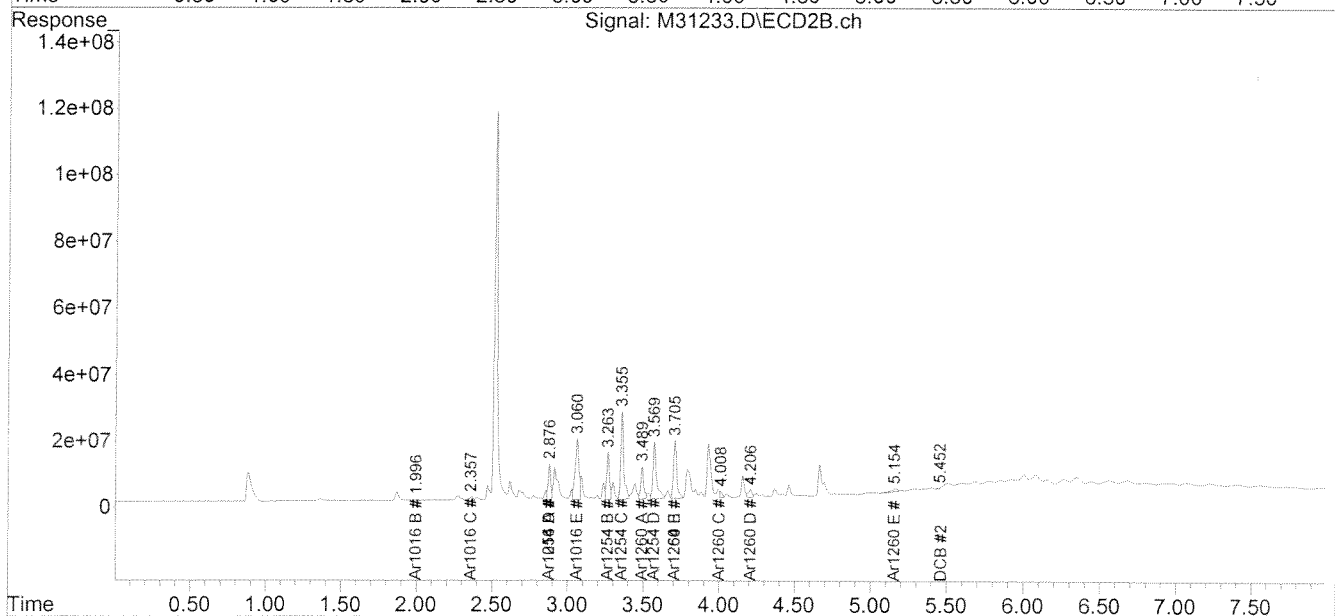
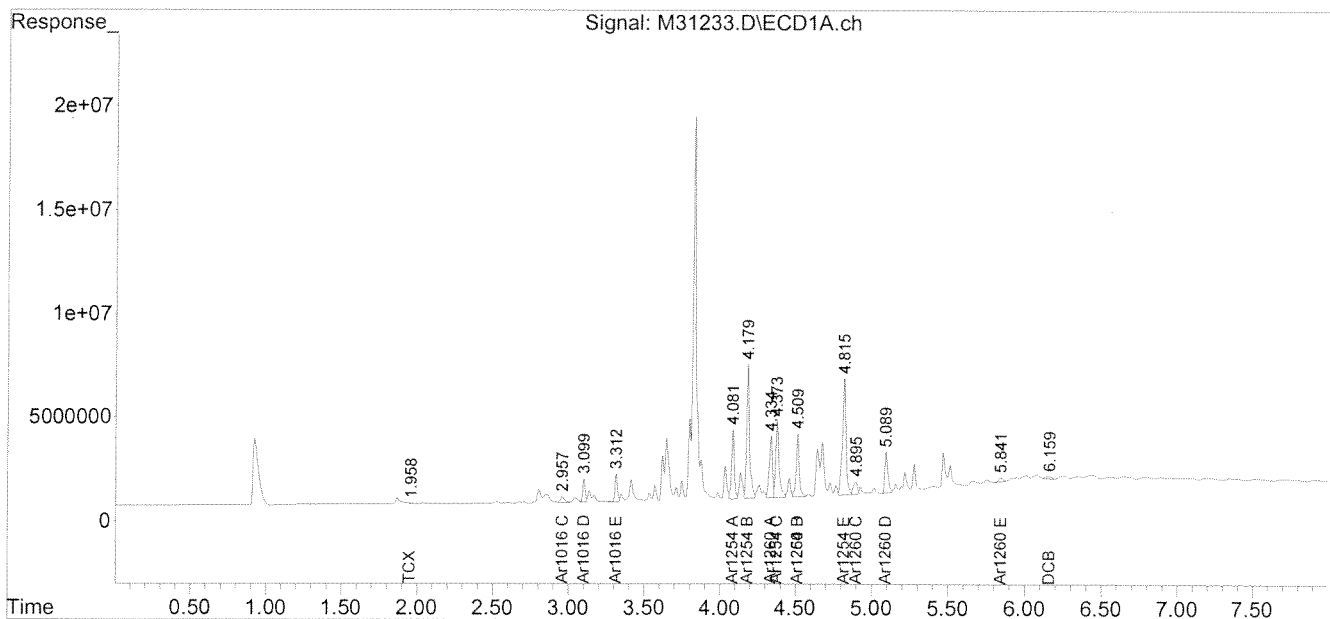
Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31233.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 7:04 pm  
Operator : JK  
Sample : 67904-2,1:5000,,A/C  
Misc : SOIL  
ALS Vial : 30 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 09:31:33 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

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10-05-10



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

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**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTY-CBC-241604-0807

**Lab Sample ID:** 67904-3  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 76  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	2510	U
PCB-1221	2510	U
PCB-1232	2510	U
PCB-1242	2510	U
PCB-1248	2510	U
PCB-1254	2510	<b>24300</b>
PCB-1260	2510	U
PCB-1262	2510	U
PCB-1268	2510	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 67904
GC Column #1: STX-CLPesticides I	Sample: 67904-3,1:50,,A/C
Column ID: 0.25 mm	Data File: M31234.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 76.2
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD
PCB 1254	24277	22859	6.0

# Column to be used to flag RPD values greater than QC limit of 40%

\* Values outside QC limits

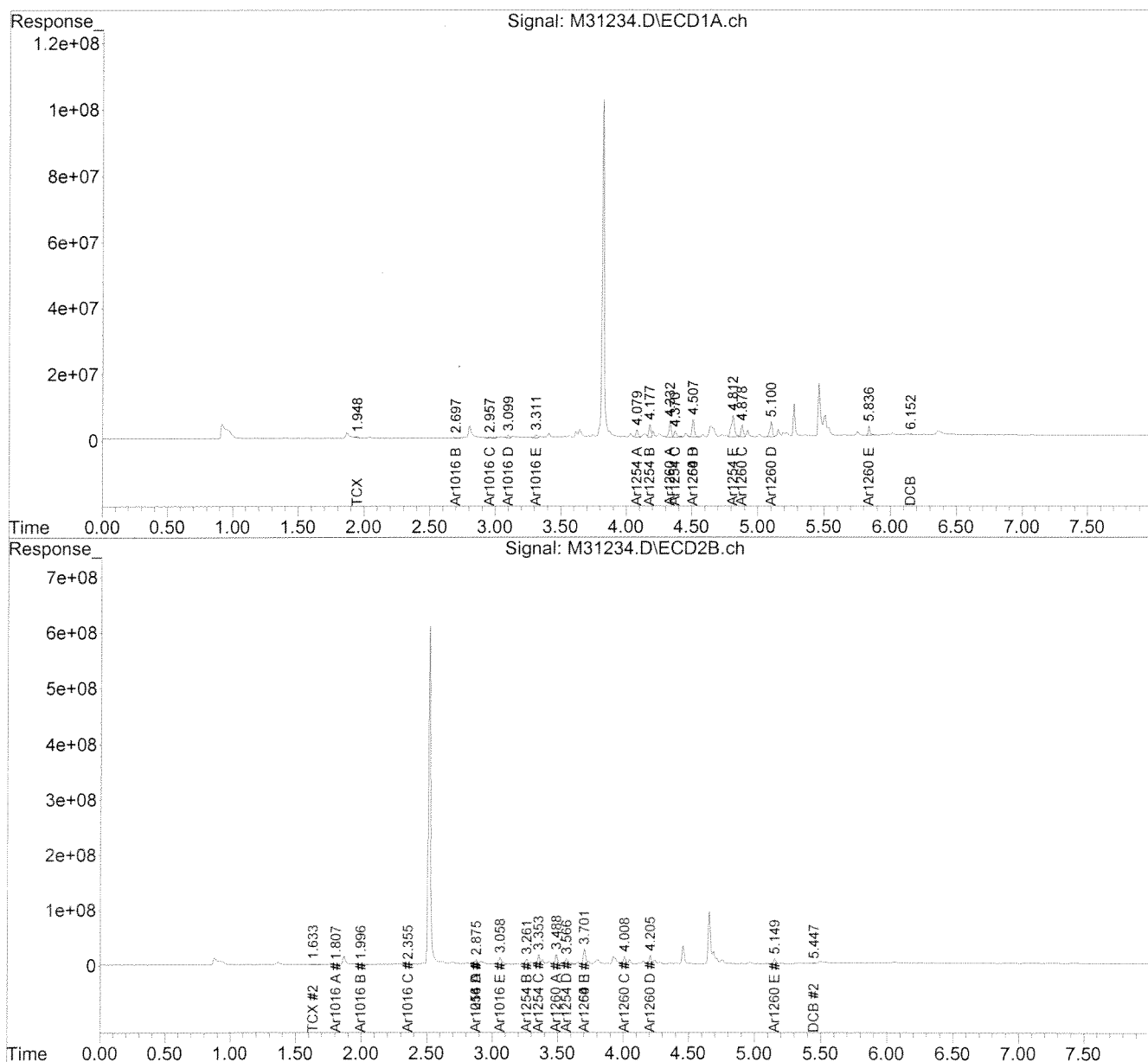
Comments: \_\_\_\_\_



Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31234.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 7:14 pm  
Operator : JK  
Sample : 67904-3,1:50,,A/C  
Misc : SOIL  
ALS Vial : 31 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 09:33:06 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace

**Project Number:** 210980

**Field Sample ID:** PTY-CWK-241604-0808

**Lab Sample ID:** 67904-4

**Matrix:** Wipe

**Percent Solid:** N/A

**Dilution Factor:** 1.0

**Collection Date:** 09/28/10

**Lab Receipt Date:** 09/29/10

**Extraction Date:** 09/29/10

**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	102	%
Decachlorobiphenyl	70	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

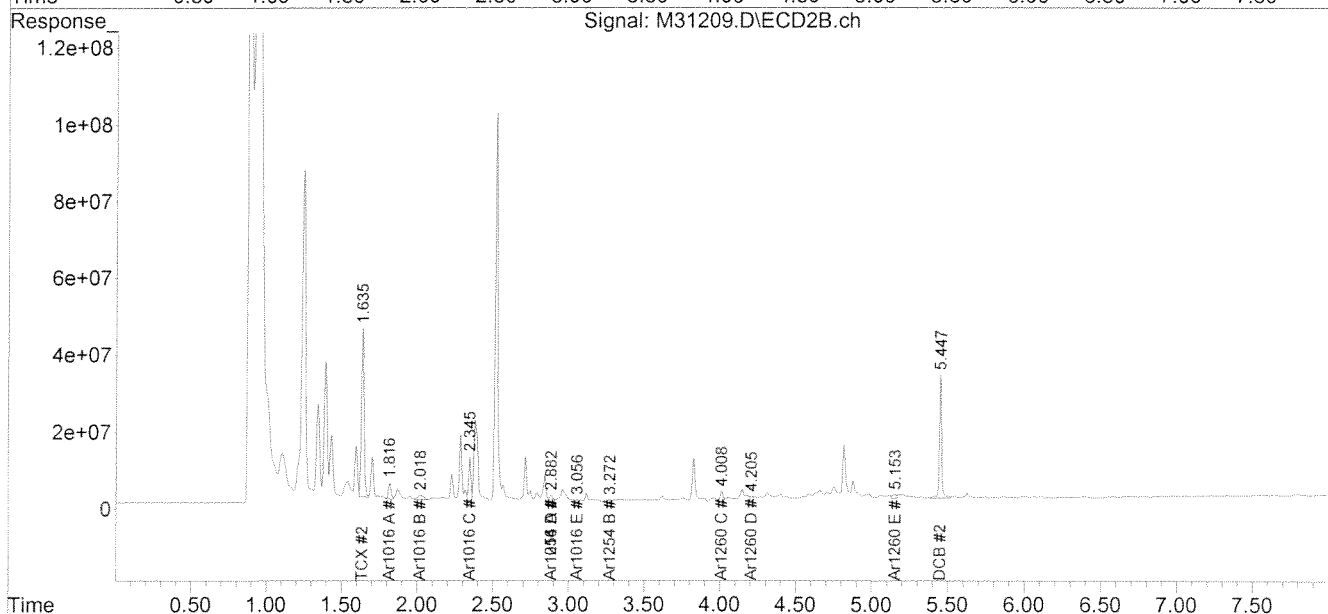
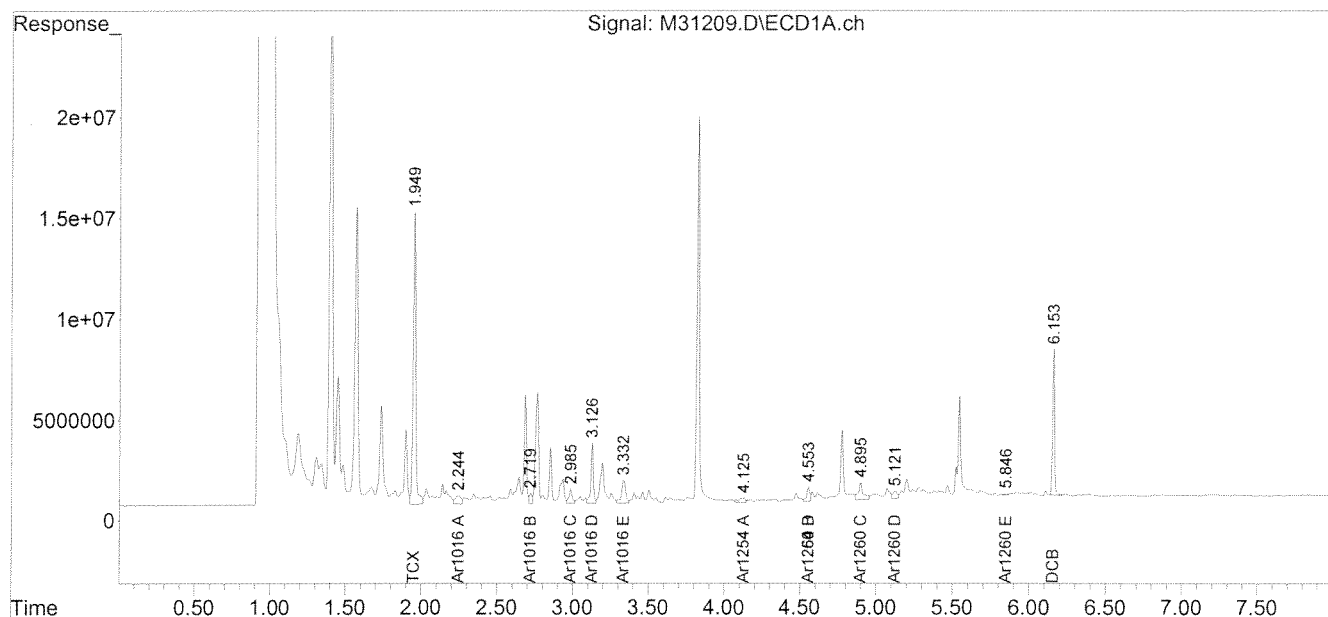
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31209.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 2:58 pm  
Operator : JK  
Sample : 67904-4,,A/C  
Misc : SOIL  
ALS Vial : 12 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 08:29:51 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTY-CWT-241604-0809

**Lab Sample ID:** 67904-5  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/}$ wipe	Results $\mu\text{g/wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	103 %	
Decachlorobiphenyl	71 %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

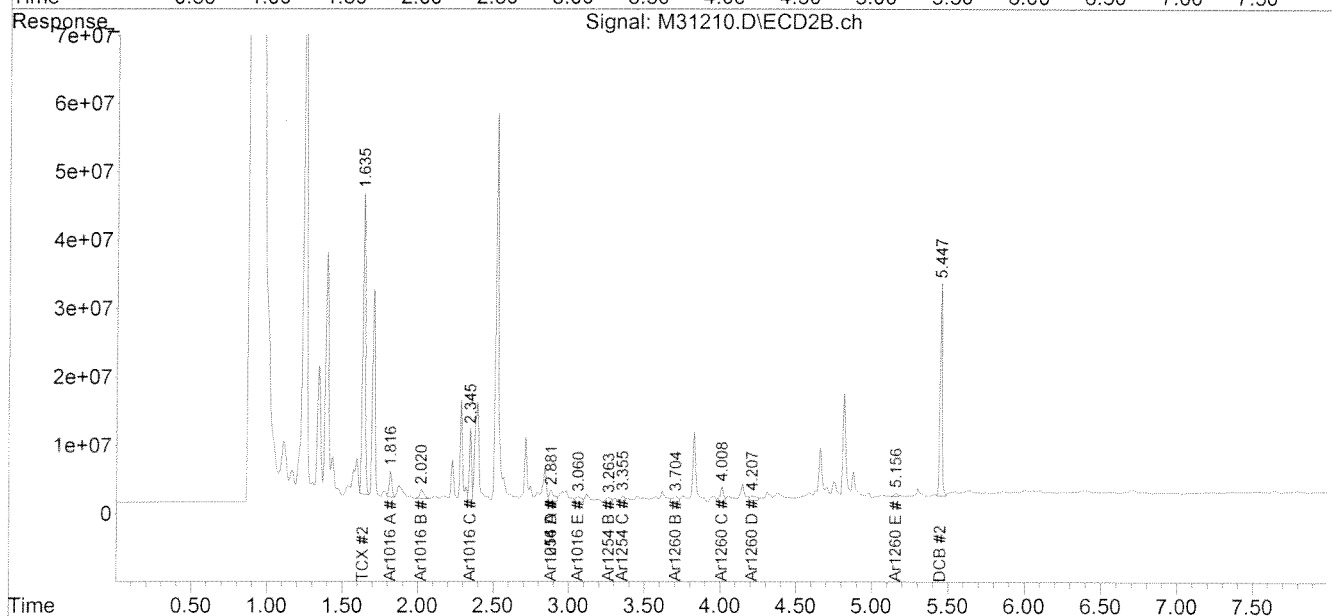
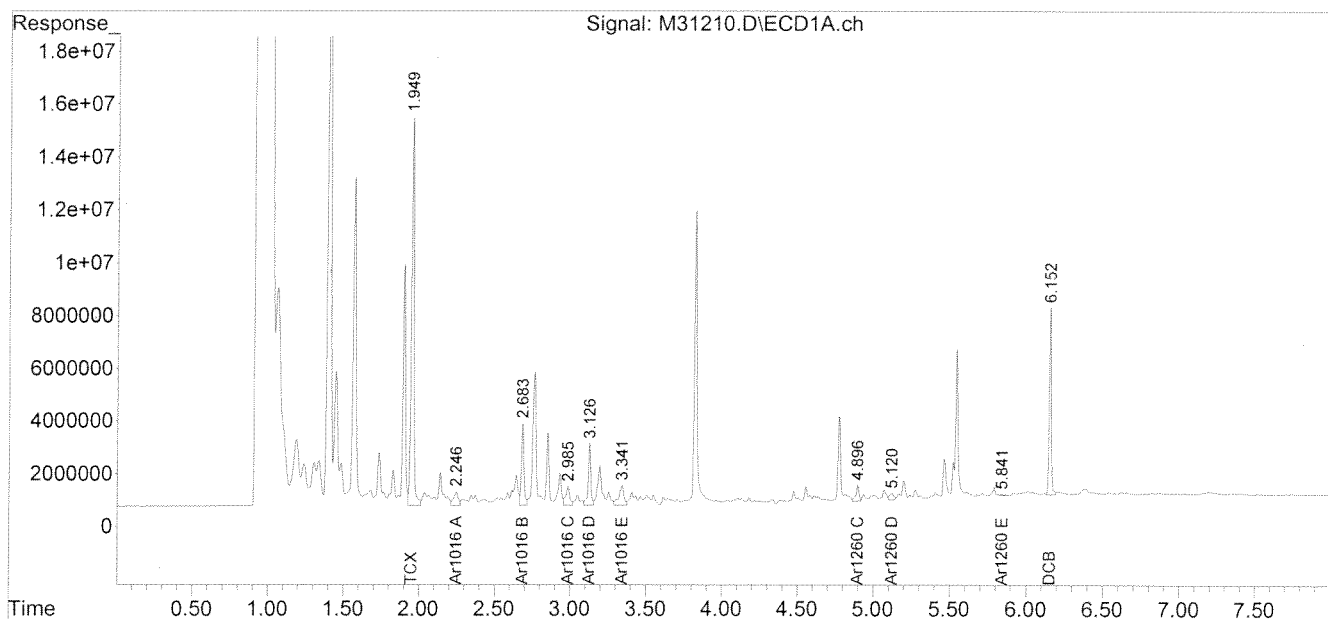
COMMENTS:

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31210.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 3:08 pm  
Operator : JK  
Sample : 67904-5,,A/C  
Misc : SOIL  
ALS Vial : 13 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 08:29:53 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

JK  
10-05-10



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTY-CWK-241604-0810

**Lab Sample ID:** 67904-6  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	102	%
Decachlorobiphenyl	70	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

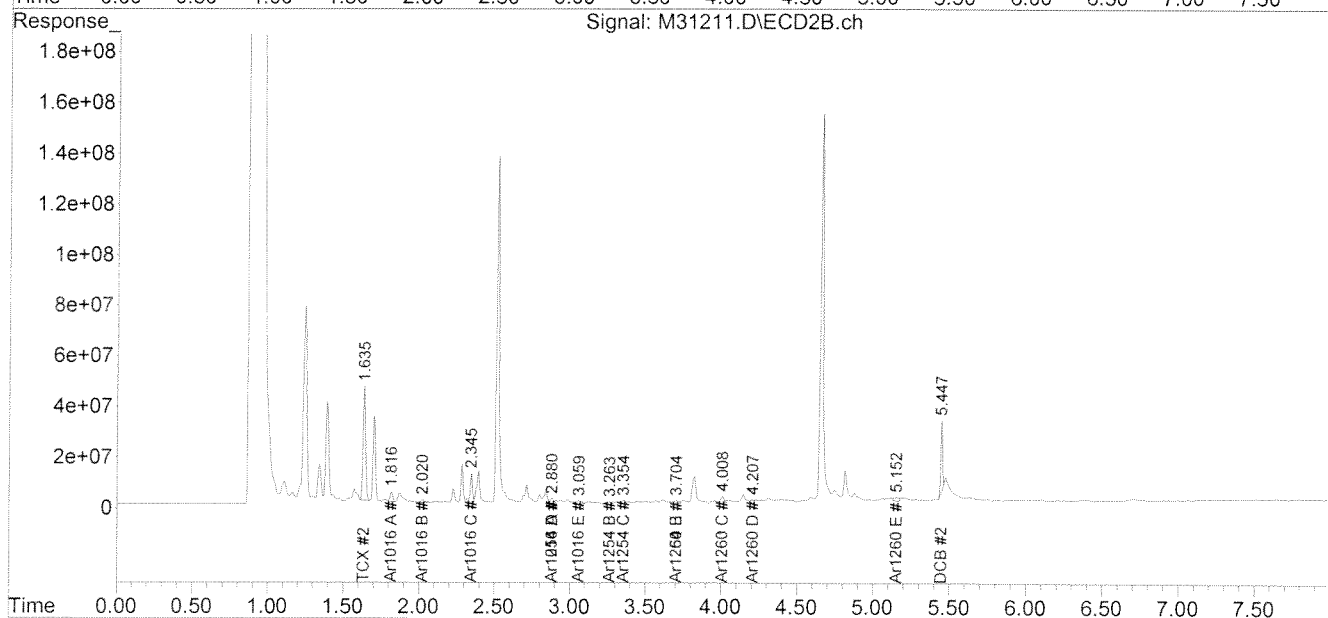
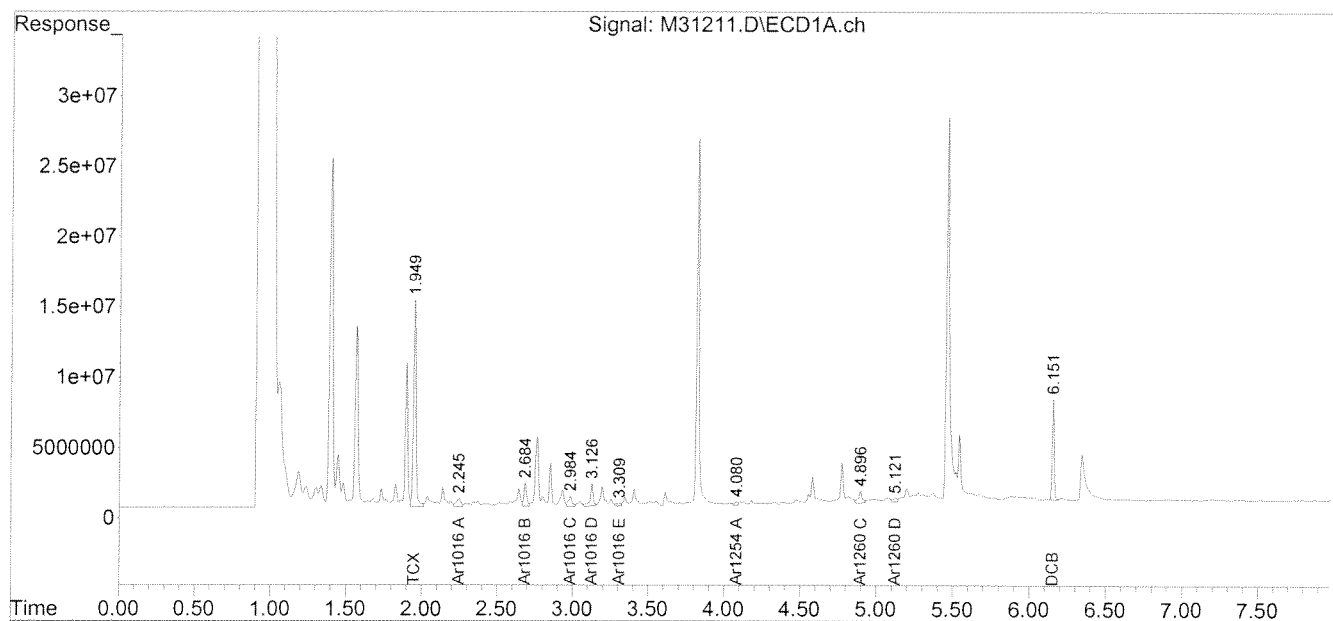
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31211.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 3:18 pm  
Operator : JK  
Sample : 67904-6,,A/C  
Misc : SOIL  
ALS Vial : 14 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 08:49:19 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTY-CWW-241604-0811

**Lab Sample ID:** 67904-7  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	101	%
Decachlorobiphenyl	70	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

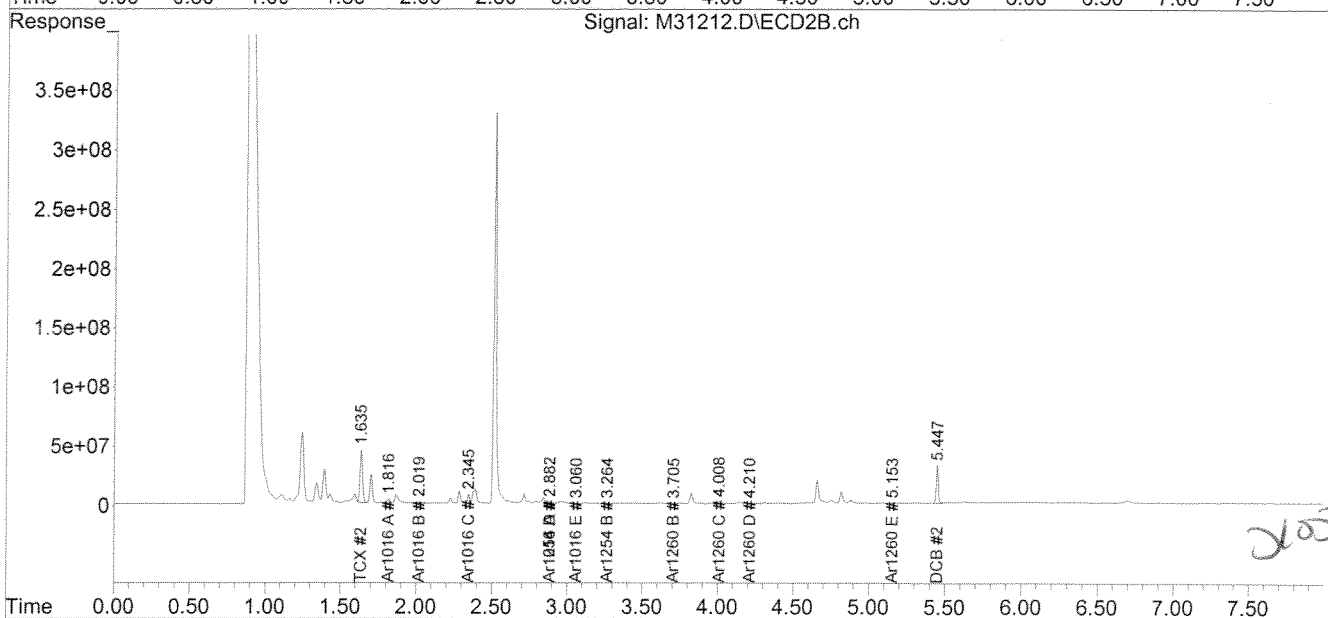
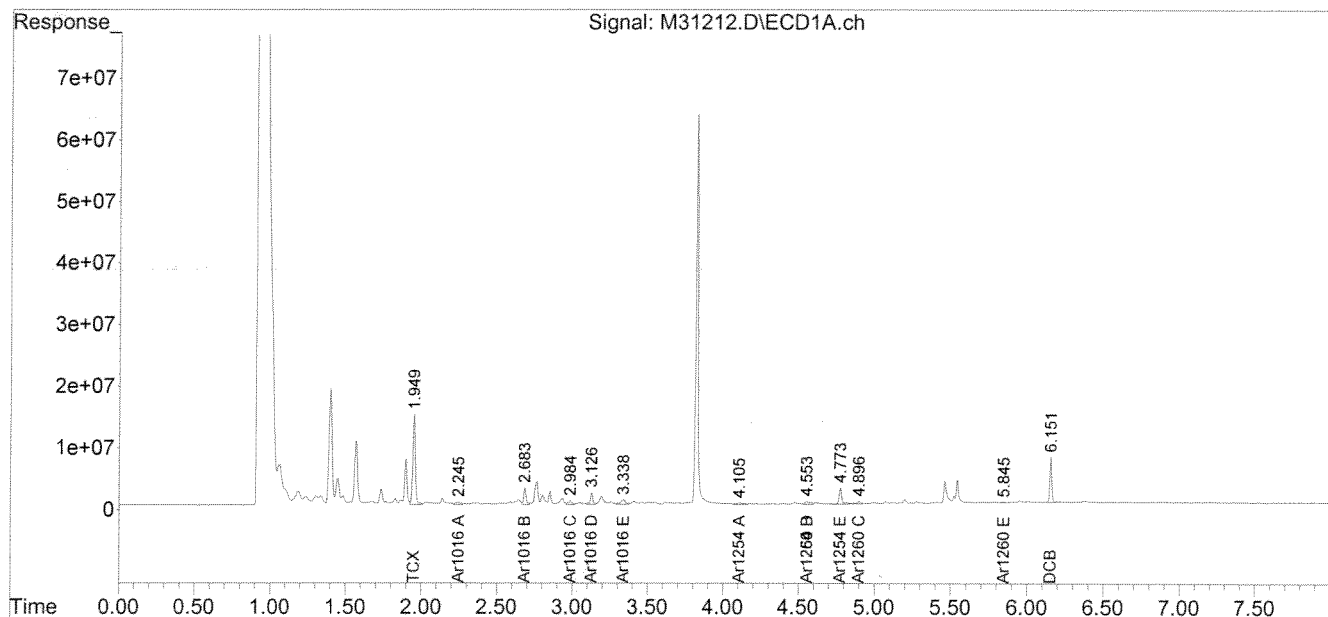
COMMENTS:



Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31212.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 3:28 pm  
Operator : JK  
Sample : 67904-7,,A/C  
Misc : SOIL  
ALS Vial : 15 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 08:49:38 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace

**Project Number:** 210980

**Field Sample ID:** PTY-CBK-241604-0812

**Lab Sample ID:** 67904-8

**Matrix:** Solid

**Percent Solid:** 99

**Dilution Factor:** 90

**Collection Date:** 09/28/10

**Lab Receipt Date:** 09/29/10

**Extraction Date:** 09/29/10

**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	2970	U
PCB-1221	2970	U
PCB-1232	2970	U
PCB-1242	2970	U
PCB-1248	2970	U
PCB-1254	2970	38800
PCB-1260	2970	U
PCB-1262	2970	U
PCB-1268	2970	U
<b>Surrogate Standard Recovery</b>		
2,4,5,6-Tetrachloro-m-xylene	101	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

**METHODOLOGY:** Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

**COMMENTS:** Results are expressed on a dry weight basis. Decachlorobiphenyl surrogate could not be measured due to sample matrix interferences. Secondary surrogate is in control.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG:
GC Column #1: STX-CLPesticides I	Sample: 67904-8,1:10,,A/C
Column ID: 0.25 mm	Data File: M31235.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 90.3
Column ID: 0.25 mm	

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	32024	38797	19.1	

# Column to be used to flag RPD values greater than QC limit of 40%

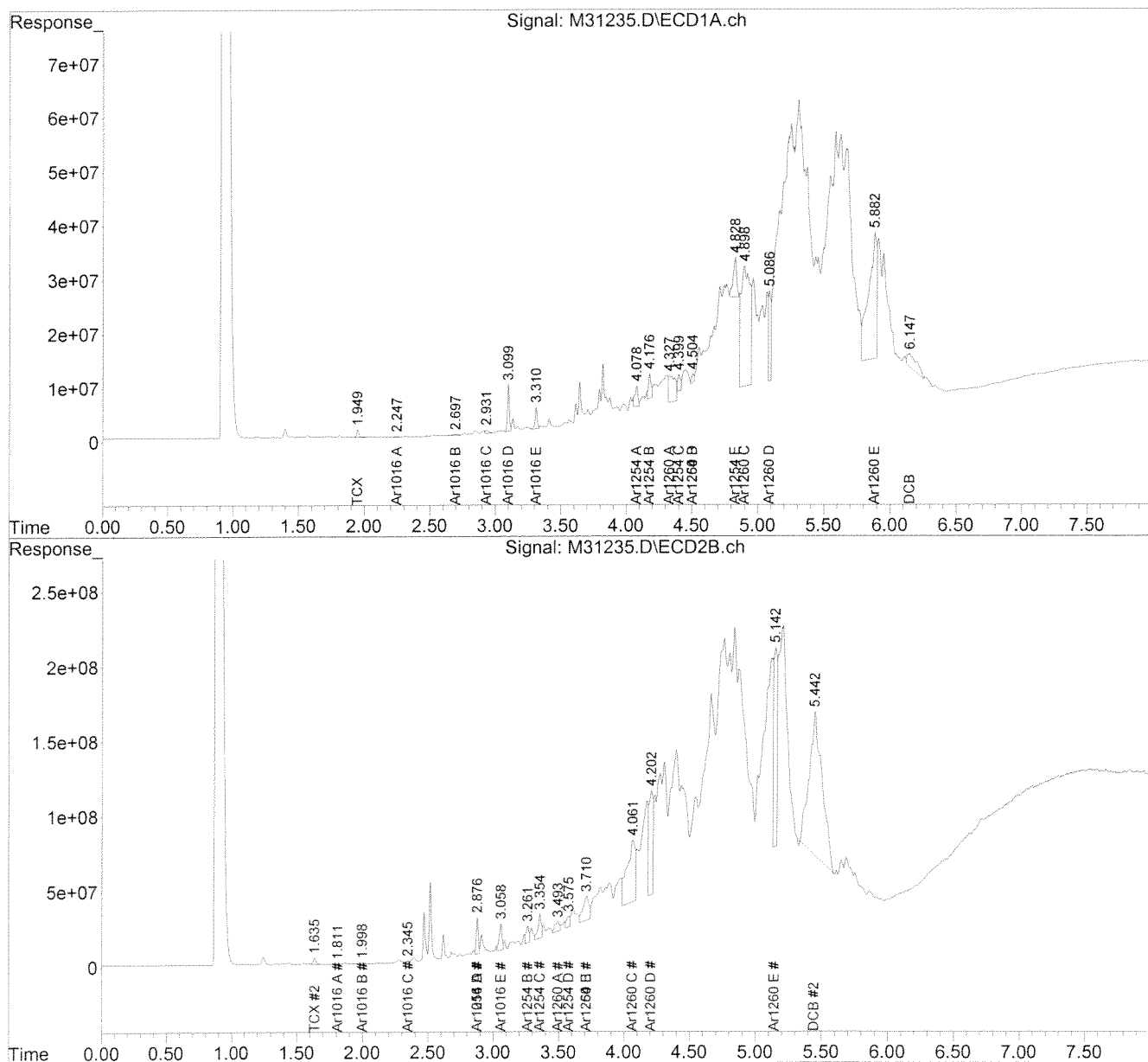
\* Values outside QC limits

Comments: \_\_\_\_\_

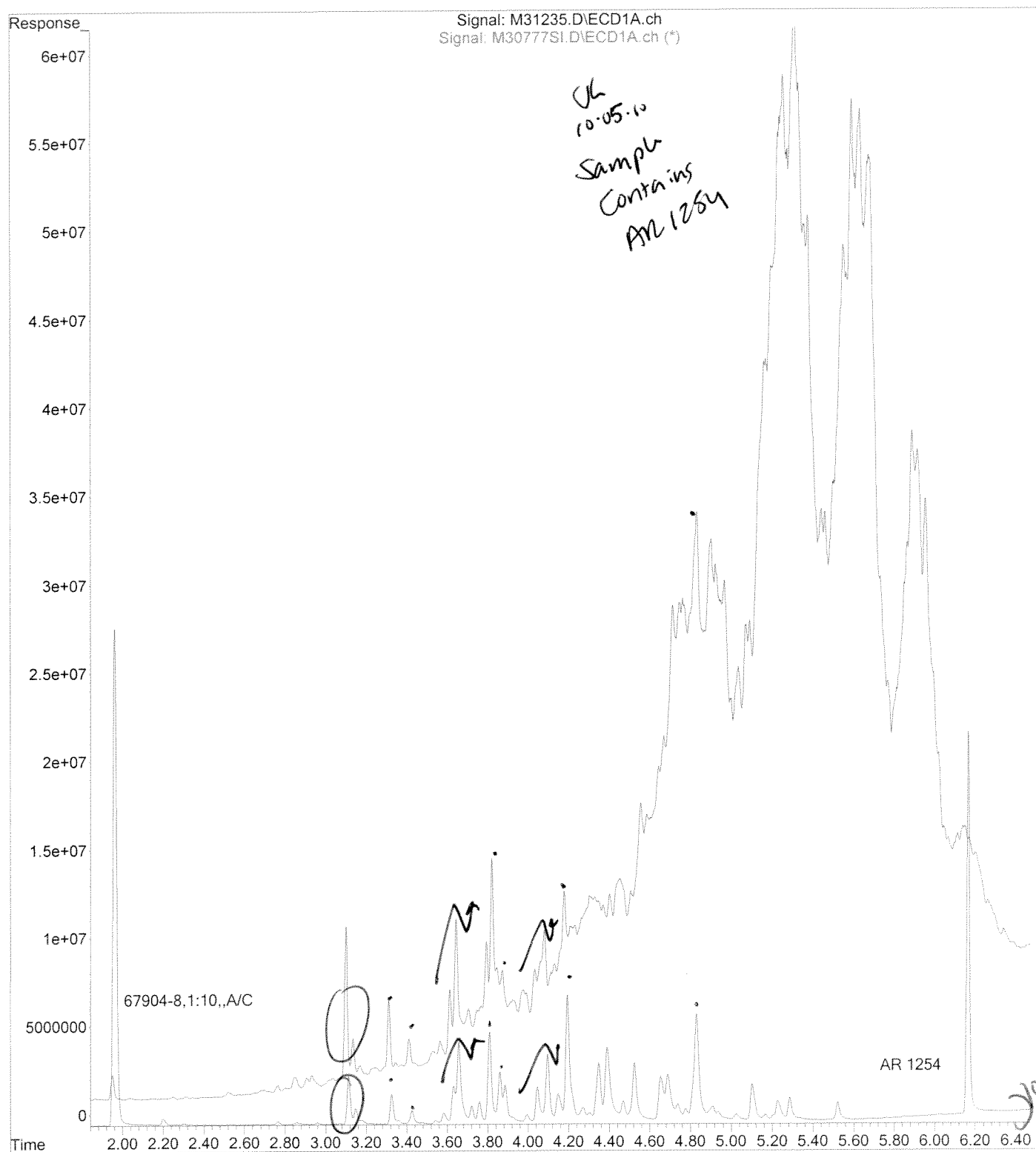
Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31235.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 7:24 pm  
Operator : JK  
Sample : 67904-8,1:10,,A/C  
Misc : SOIL  
ALS Vial : 32 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 06 10:32:20 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



File :C:\msdchem\1\DATA\100410-M\M31235.D  
Operator : JK  
Acquired : 4 Oct 2010 7:24 pm using AcqMethod PEST.M  
Instrument : Instrument M  
Sample Name: 67904-8,1:10,,A/C  
Misc Info : SOIL  
Vial Number: 32



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTY-CWM-241604-0813

**Lab Sample ID:** 67904-9  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/}$ wipe	Results $\mu\text{g/wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	104	%
Decachlorobiphenyl	71	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

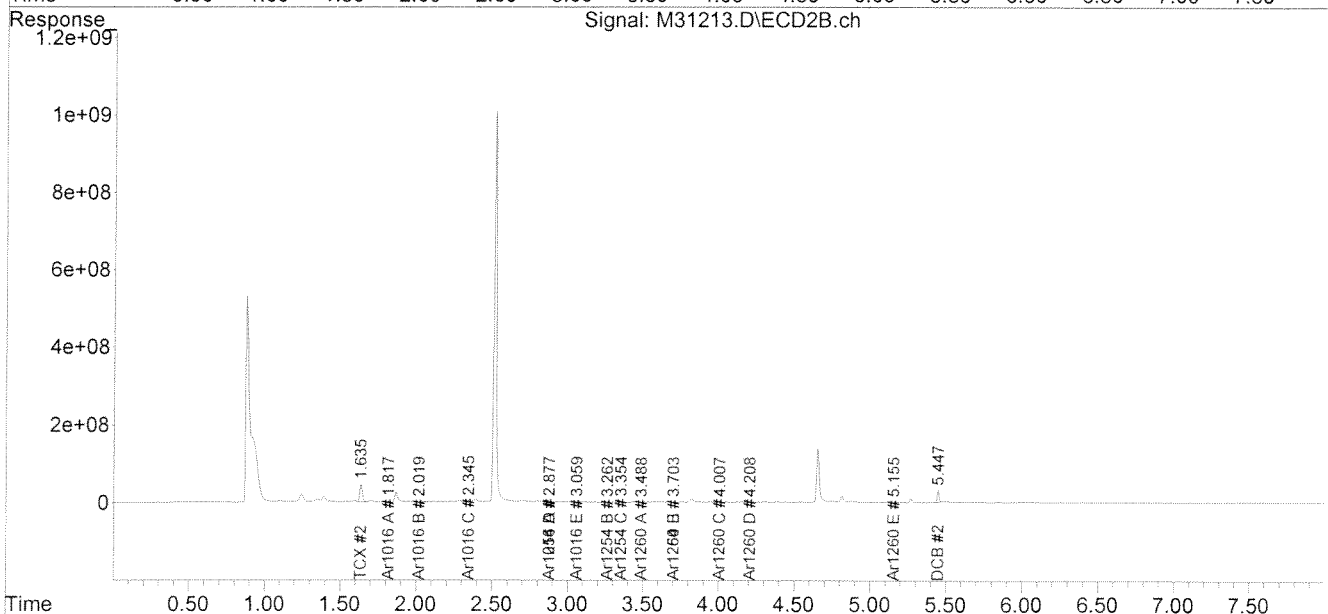
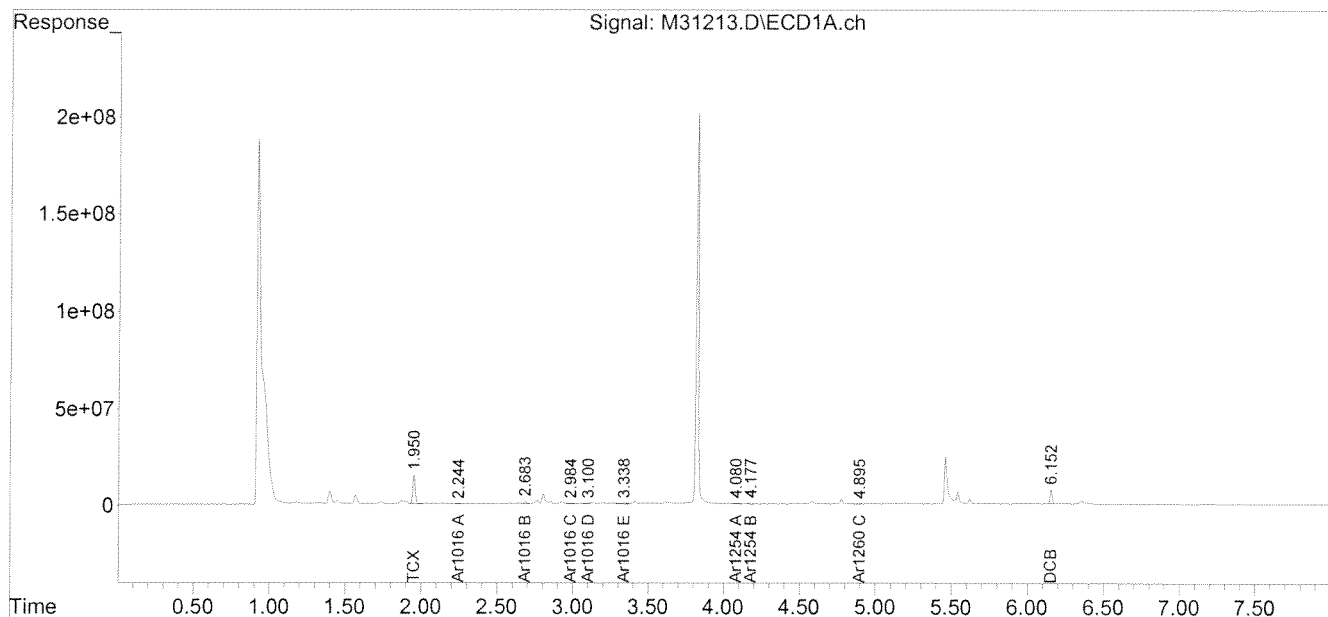
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31213.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 3:39 pm  
Operator : JK  
Sample : 67904-9,,A/C  
Misc : SOIL  
ALS Vial : 16 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 08:50:17 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides <sup>10.05.10</sup>  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CBC-2532-0816

**Lab Sample ID:** 67904-10  
**Matrix:** Solid  
**Percent Solid:** 98  
**Dilution Factor:** 10  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	330	U
PCB-1221	330	U
PCB-1232	330	U
PCB-1242	330	U
PCB-1248	330	U
PCB-1254	330	U
PCB-1260	330	<b>3580</b>
PCB-1262	330	U
PCB-1268	330	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	96	%
Decachlorobiphenyl	95	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.



PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 67904
GC Column #1: STX-CLPesticides I	Sample: 67904-10,1:10,,A/C
Column ID: 0.25 mm	Data File: M31236.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 9.9
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1260	3583	3300	8.2

# Column to be used to flag RPD values greater than QC limit of 40%

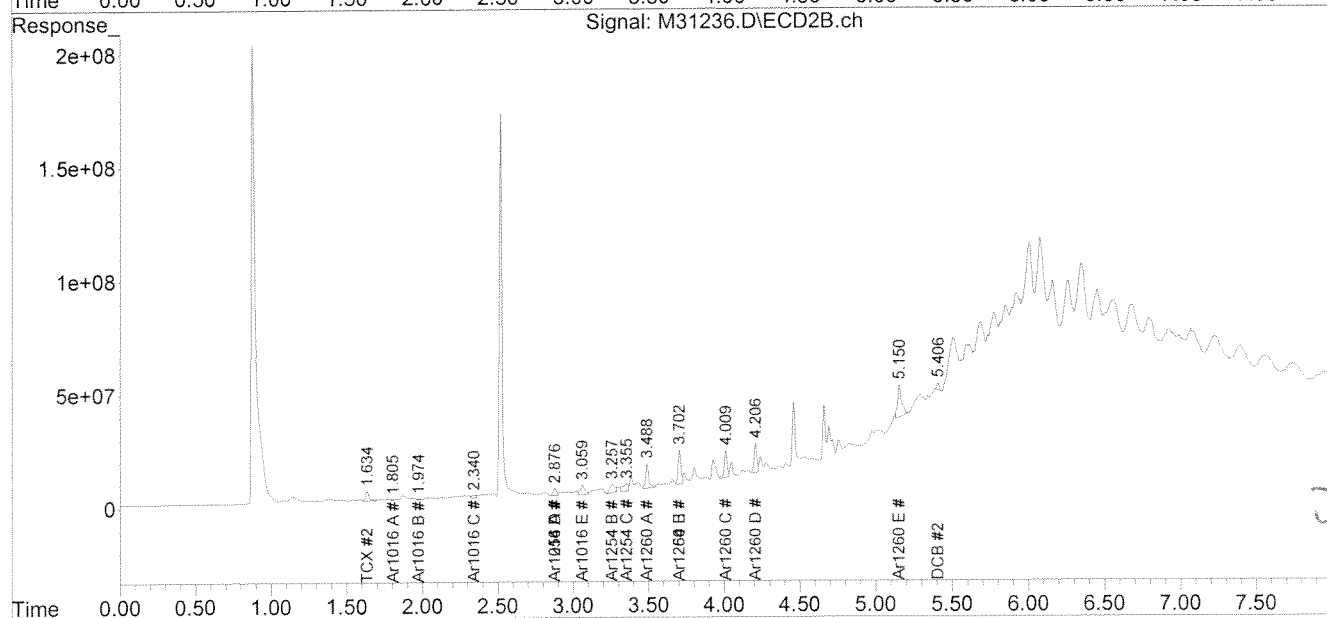
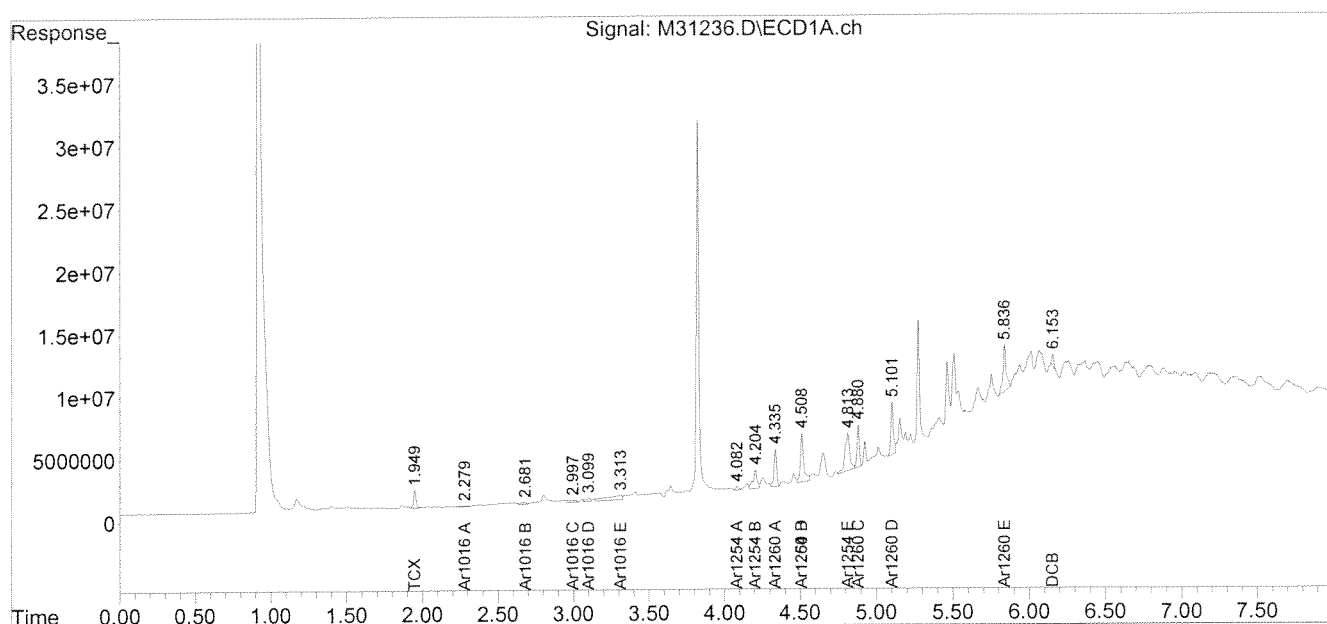
\* Values outside QC limits

Comments: \_\_\_\_\_

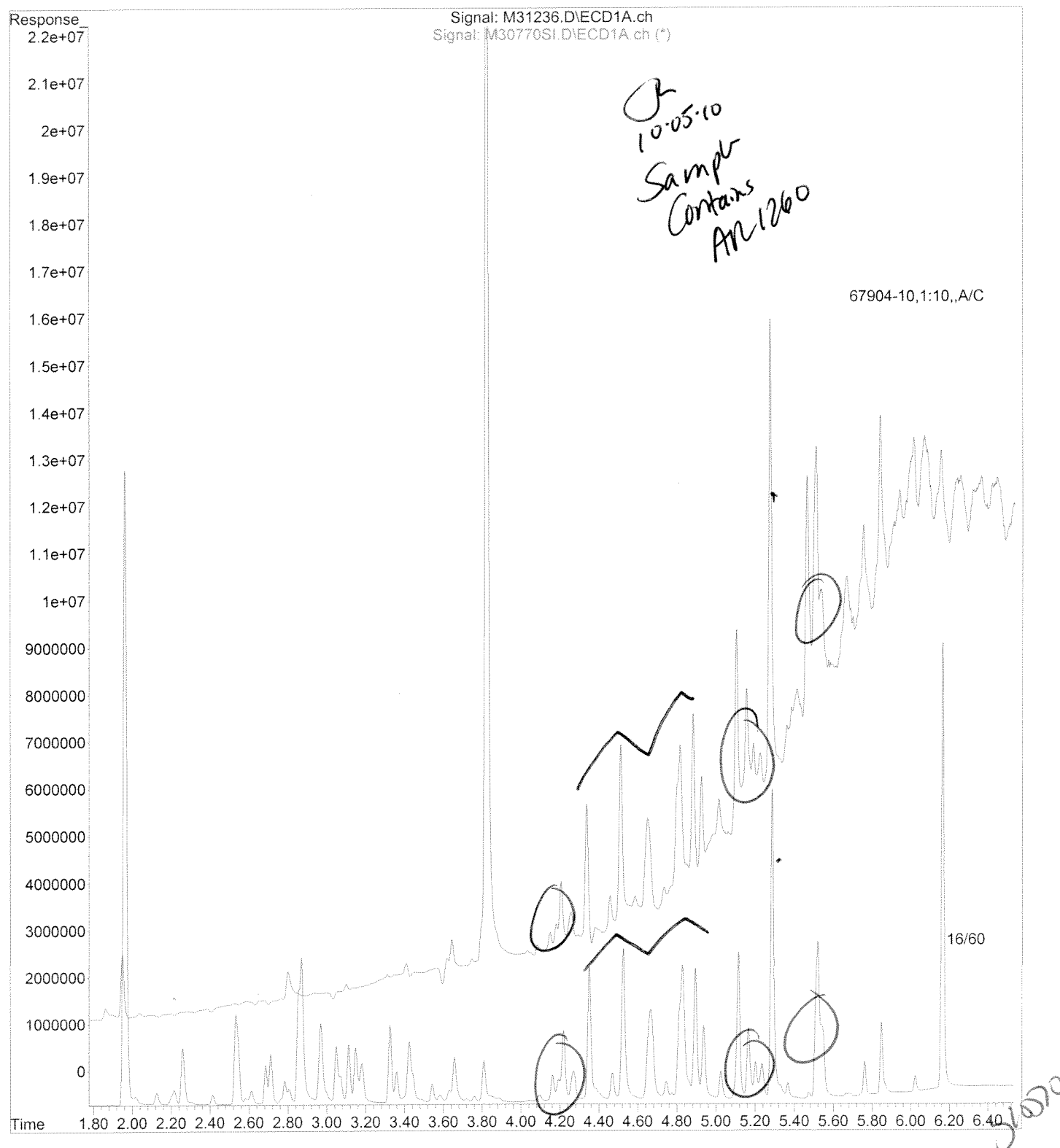
Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31236.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 7:34 pm  
Operator : JK  
Sample : 67904-10,1:10,,A/C  
Misc : SOIL  
ALS Vial : 33 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 09:39:37 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



File :C:\msdchem\1\DATA\100410-M\M31236.D  
Operator : JK  
Acquired : 4 Oct 2010 7:34 pm using AcqMethod PEST.M  
Instrument : Instrument M  
Sample Name: 67904-10,1:10,,A/C  
Misc Info : SOIL  
Vial Number: 33



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace

**Project Number:** 210980

**Field Sample ID:** PTE-CBC-2532-0817

**Lab Sample ID:** 67904-11

**Matrix:** Solid

**Percent Solid:** 99

**Dilution Factor:** 1.0

**Collection Date:** 09/28/10

**Lab Receipt Date:** 09/29/10

**Extraction Date:** 09/29/10

**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	<b>245</b>
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	90	%
Decachlorobiphenyl	68	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 67904
GC Column #1: STX-CLPesticides I	Sample: 67904-11,,A/C
Column ID: 0.25 mm	Data File: M31237.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 1.0
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD
PCB 1254	245	231	5.6

# Column to be used to flag RPD values greater than QC limit of 40%

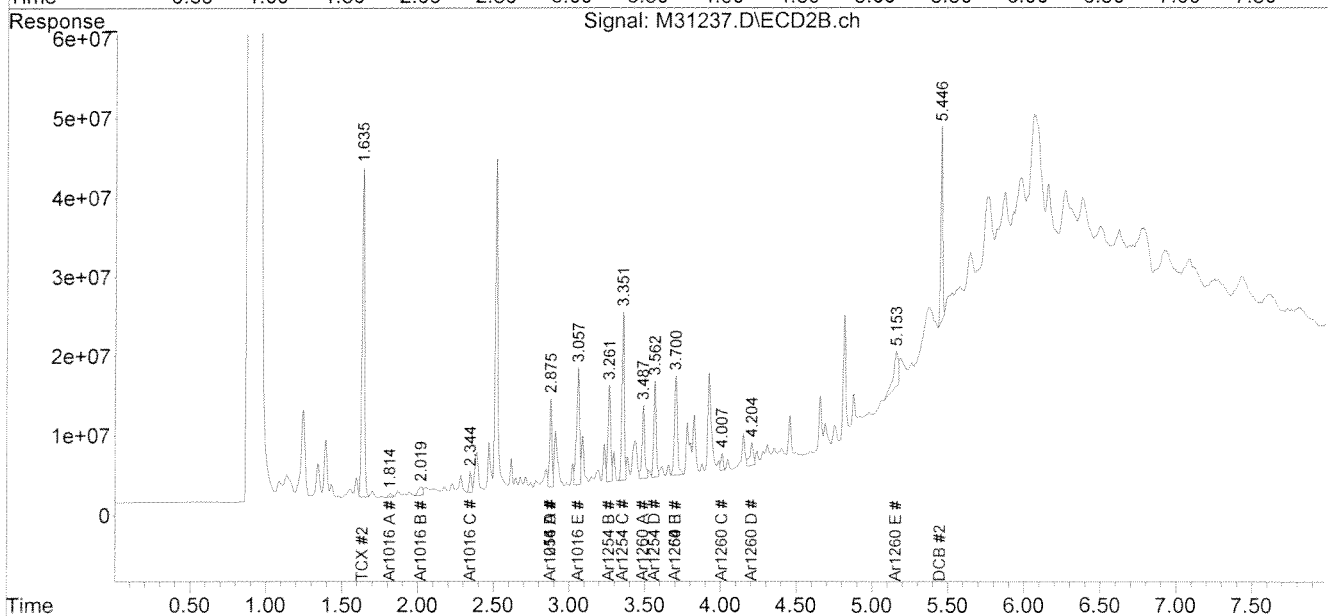
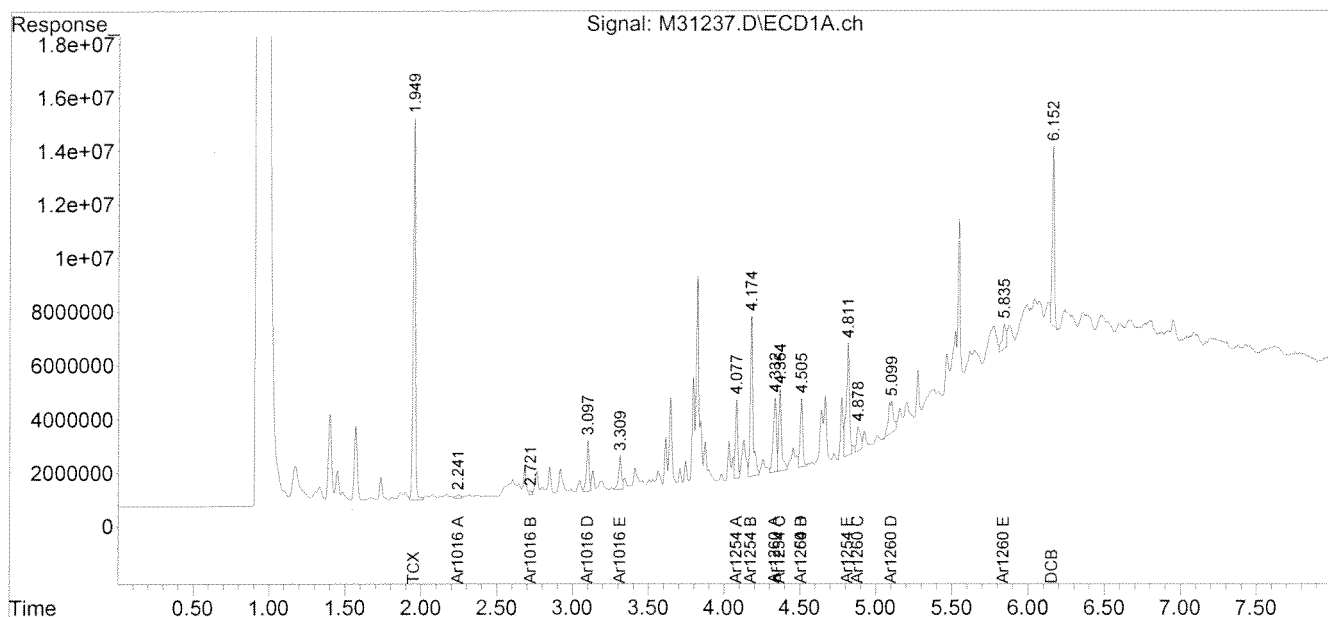
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31237.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 7:45 pm  
Operator : JK  
Sample : 67904-11,,A/C  
Misc : SOIL  
ALS Vial : 34 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 09:42:05 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CBK-2532-0818

**Lab Sample ID:** 67904-12  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 998  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	32900	U
PCB-1221	32900	U
PCB-1232	32900	U
PCB-1242	32900	U
PCB-1248	32900	U
PCB-1254	32900	<b>219000</b>
PCB-1260	32900	U
PCB-1262	32900	U
PCB-1268	32900	U
<b>Surrogate Standard Recovery</b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 67904
GC Column #1: STX-CLPesticides I	Sample: 67904-12,1:100,,A/C
Column ID: 0.25 mm	Data File: M31238.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 997.5
Column ID: 0.25 mm	

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	219459	207099	5.8	

# Column to be used to flag RPD values greater than QC limit of 40%

\* Values outside QC limits

Comments: \_\_\_\_\_

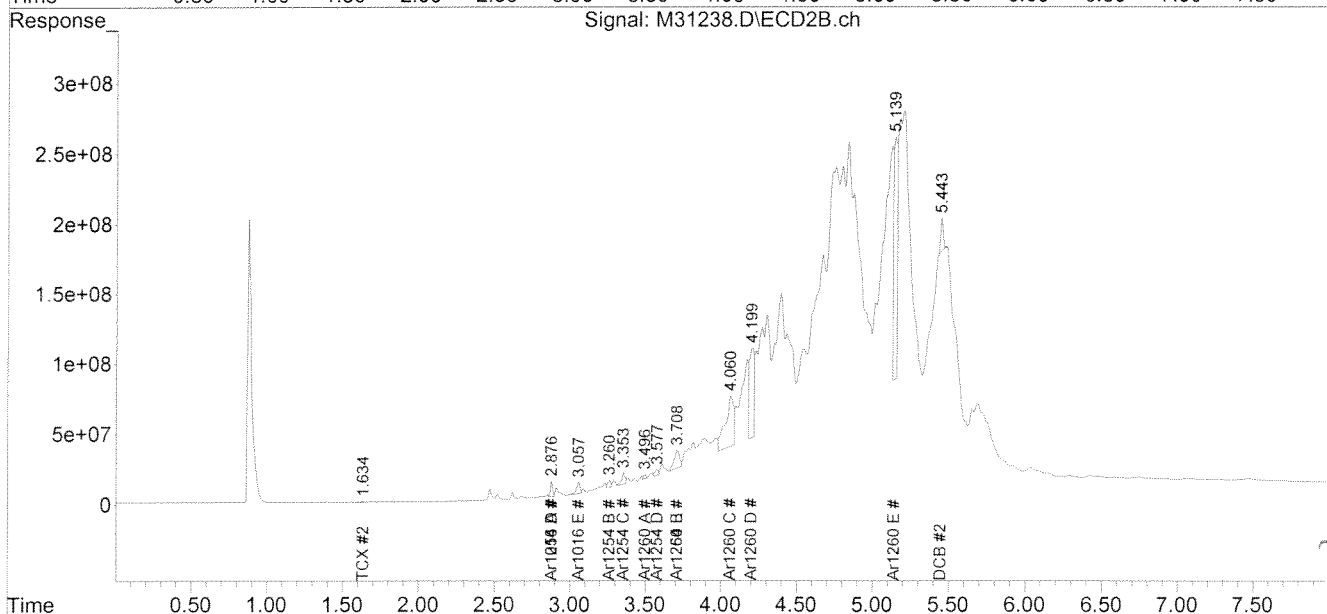
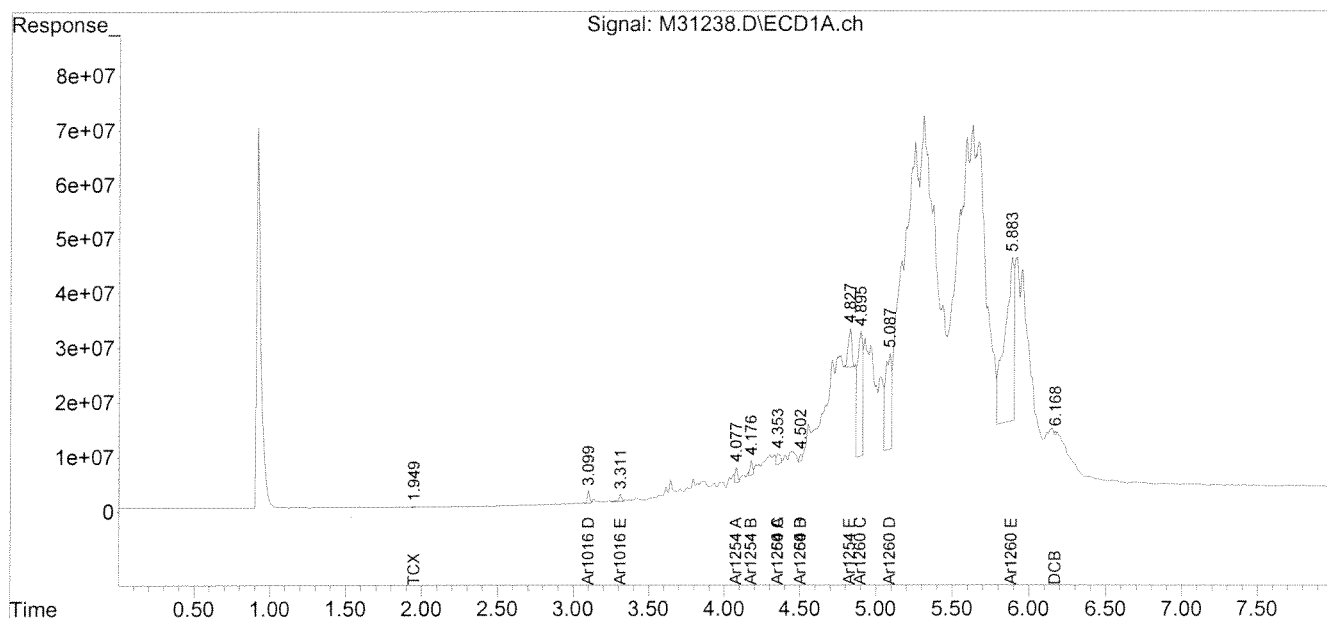


Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31238.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 7:55 pm  
Operator : JK  
Sample : 67904-12,1:100,,A/C  
Misc : SOIL  
ALS Vial : 35 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 09:44:17 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

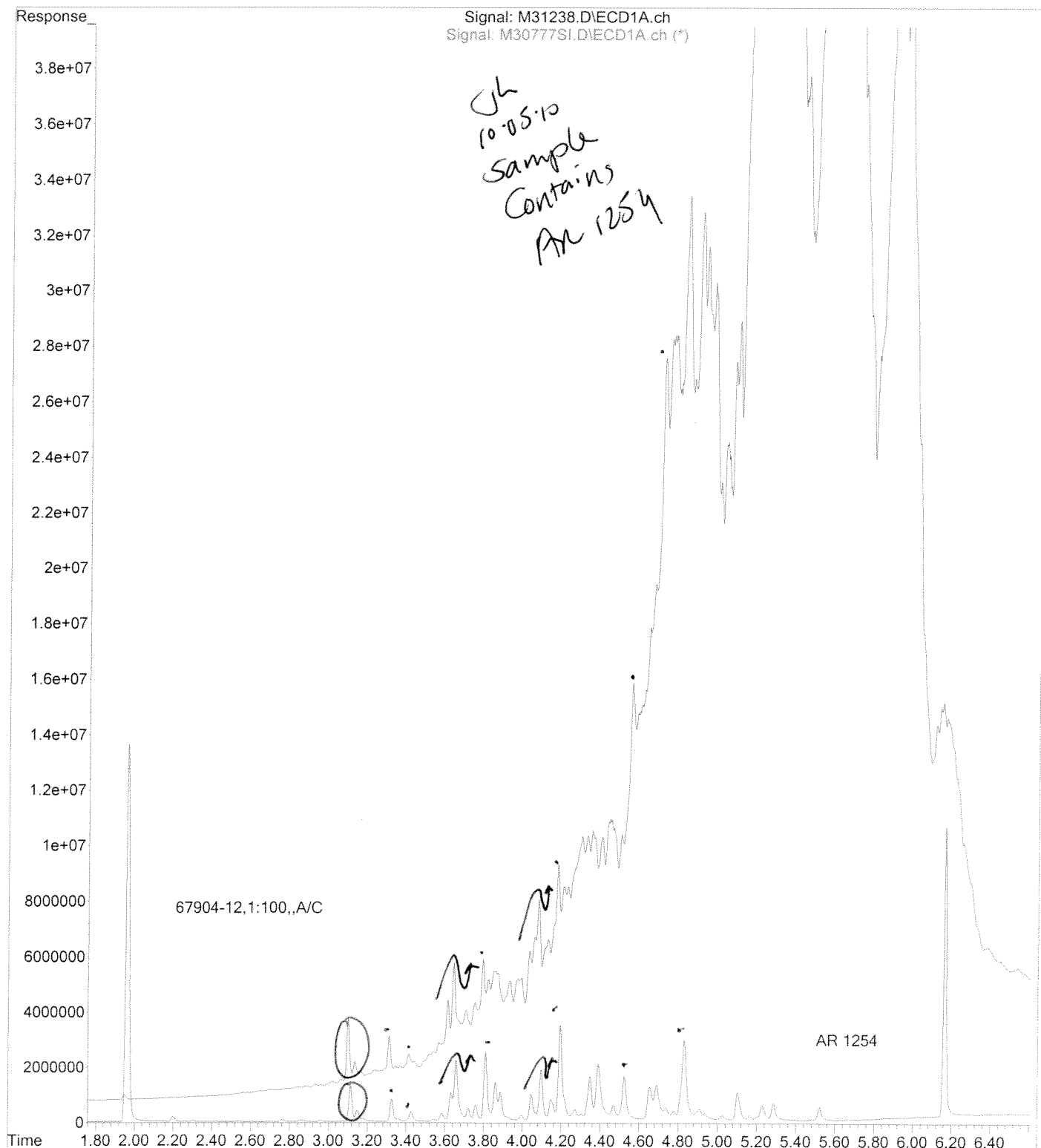
Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

JK  
10-05-10



2020

File :C:\msdchem\1\DATA\100410-M\M31238.D  
Operator : JK  
Acquired : 4 Oct 2010 7:55 pm using AcqMethod PEST.M  
Instrument : Instrument M  
Sample Name: 67904-12,1:100,,A/C  
Misc Info : SOIL  
Vial Number: 35



*Handwritten:* 210610

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace

**Project Number:** 210980

**Field Sample ID:** PTE-CBK-2532-0819

**Lab Sample ID:** 67904-13

**Matrix:** Solid

**Percent Solid:** 98

**Dilution Factor:** 250000

**Collection Date:** 09/28/10

**Lab Receipt Date:** 09/29/10

**Extraction Date:** 09/29/10

**Analysis Date:** 10/05/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	8250000	U
PCB-1221	8250000	U
PCB-1232	8250000	U
PCB-1242	8250000	U
PCB-1248	8250000	U
PCB-1254	8250000	<b>130000000</b>
PCB-1260	8250000	U
PCB-1262	8250000	U
PCB-1268	8250000	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 67904

GC Column #1: STX-CLPesticides I

Sample: 67904-13,1:25000,,A/C

Column ID: 0.25 mm

Data File: M31275.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 250176.6

Column ID: 0.25 mm

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	130472489	129471307	0.8

# Column to be used to flag RPD values greater than QC limit of 40%

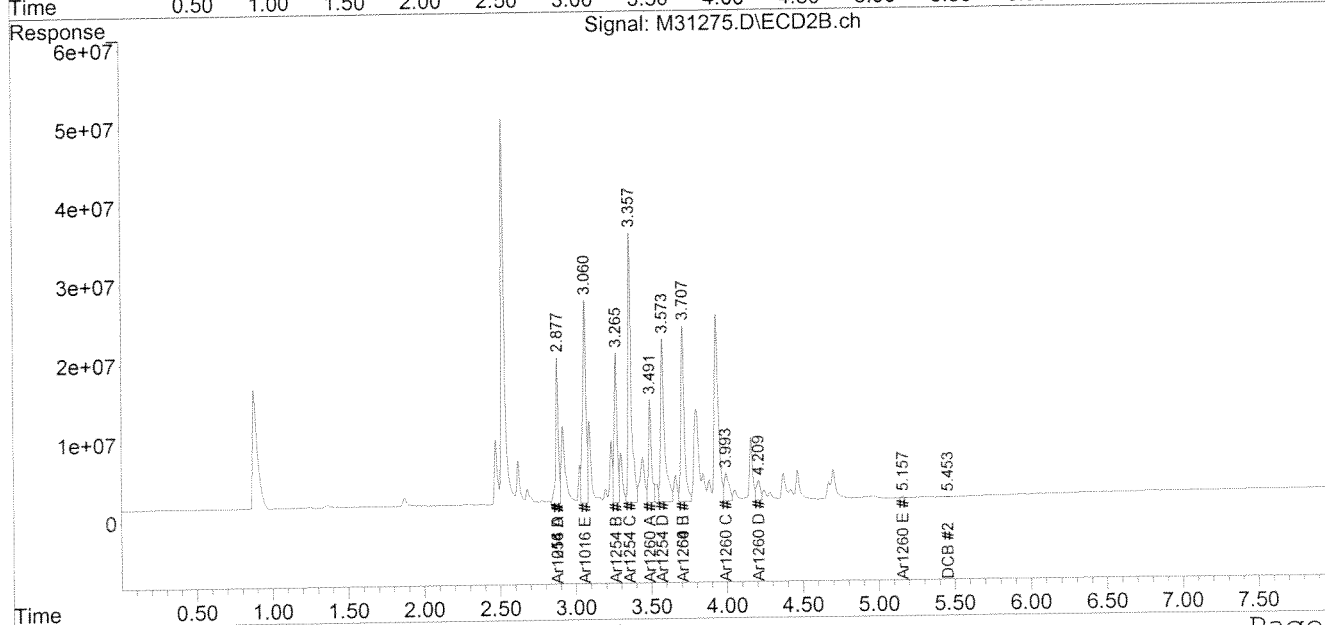
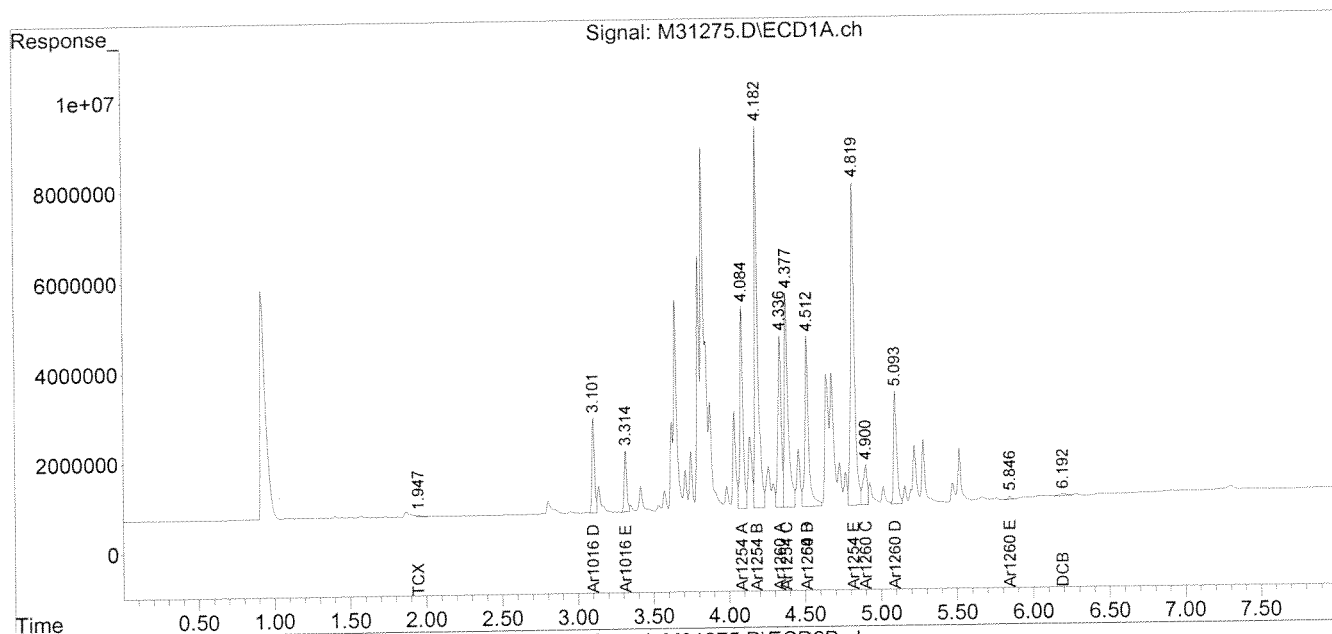
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31275.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 5 Oct 2010 10:36 am  
Operator : JK  
Sample : 67904-13,1:25000,,A/C  
Misc : SOIL  
ALS Vial : 91 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 14:44:57 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CBK-2532-0820

**Lab Sample ID:** 67904-14  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 2290  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	75600	U
PCB-1221	75600	U
PCB-1232	75600	U
PCB-1242	75600	U
PCB-1248	75600	U
PCB-1254	75600	<b>1210000</b>
PCB-1260	75600	U
PCB-1262	75600	U
PCB-1268	75600	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.



PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 67904

GC Column #1: STX-CLPesticides I

Sample: 67904-14,1:250,,A/C

Column ID: 0.25 mm

Data File: M31240.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 2292.7

Column ID: 0.25 mm

COMPOUND	Column #1	Column #2	RPD		#
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	1161677	1209263	4.0		

# Column to be used to flag RPD values greater than QC limit of 40%

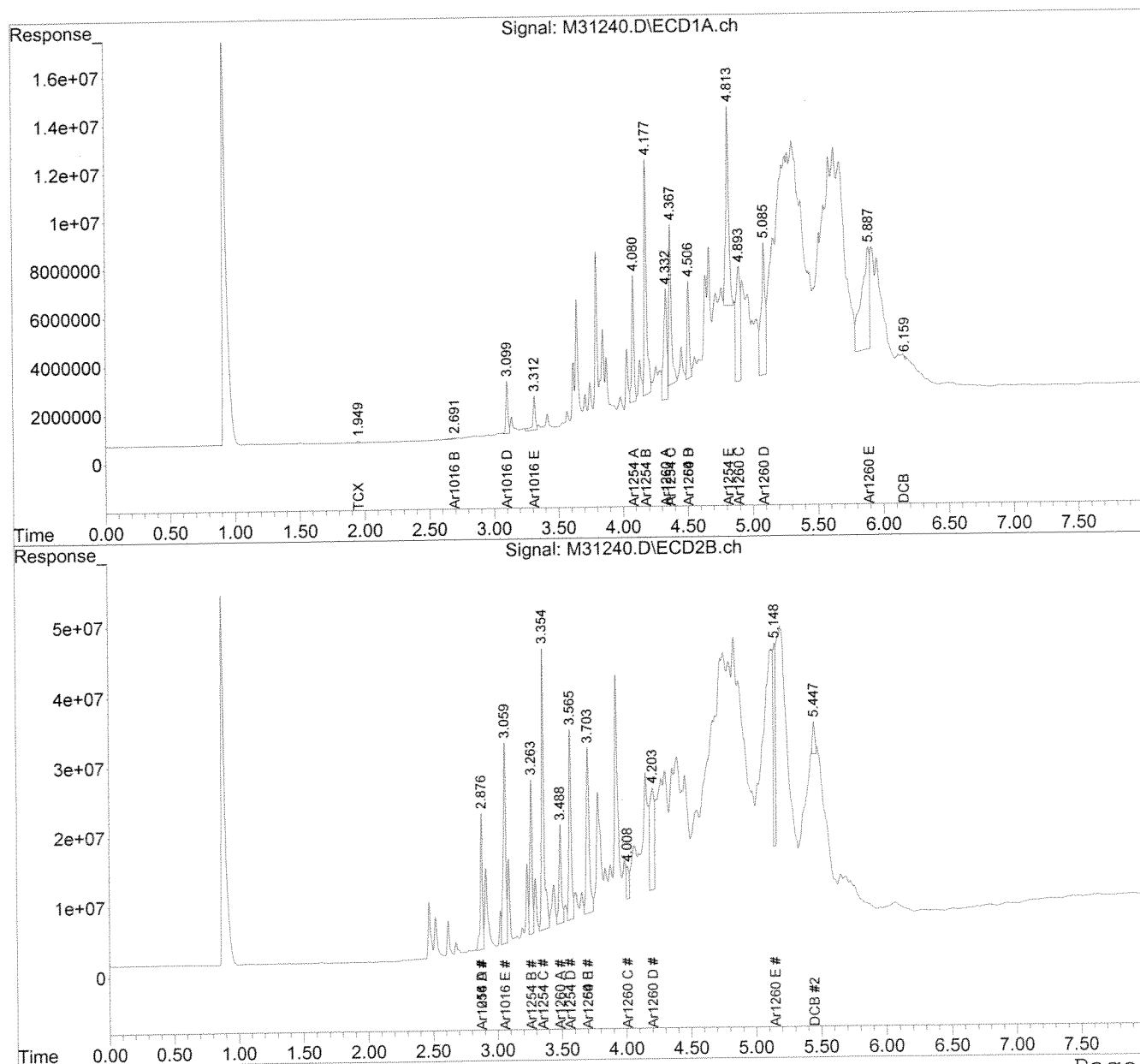
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31240.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 8:15 pm  
Operator : JK  
Sample : 67904-14,1:250,,A/C  
Misc : SOIL  
ALS Vial : 37 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 09:47:05 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CWK-2532-0821

**Lab Sample ID:** 67904-15  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b>Surrogate Standard Recovery</b>		
2,4,5,6-Tetrachloro-m-xylene	107 %	
Decachlorobiphenyl	72 %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

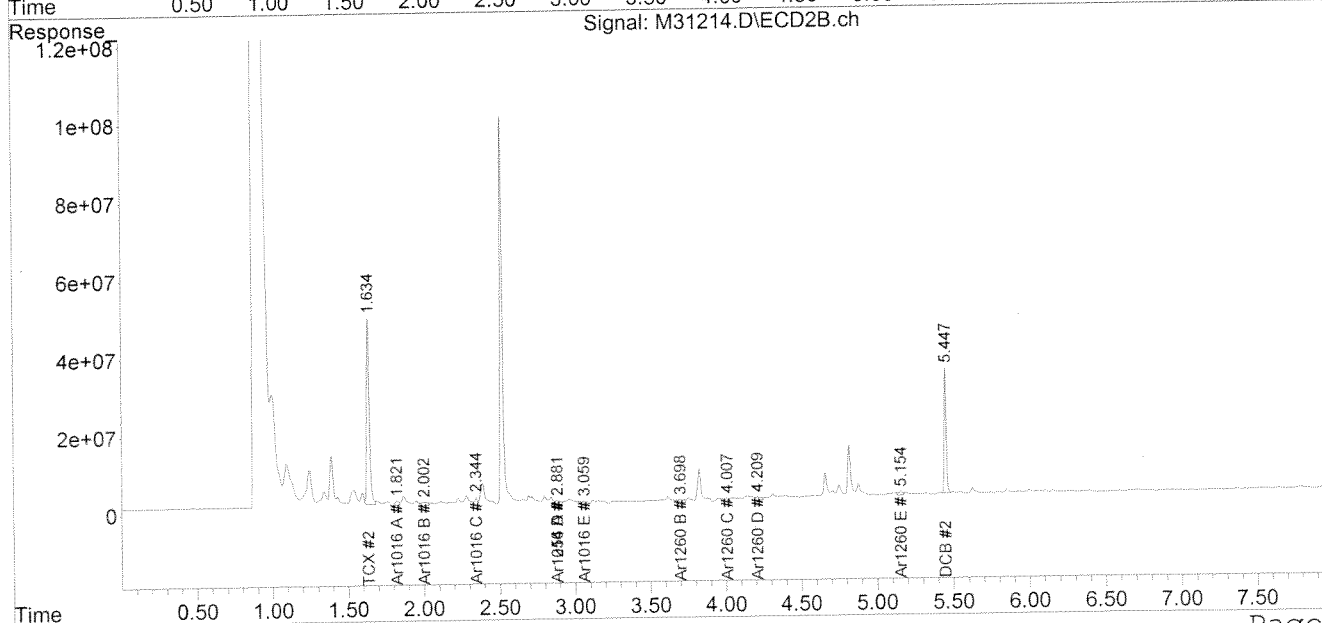
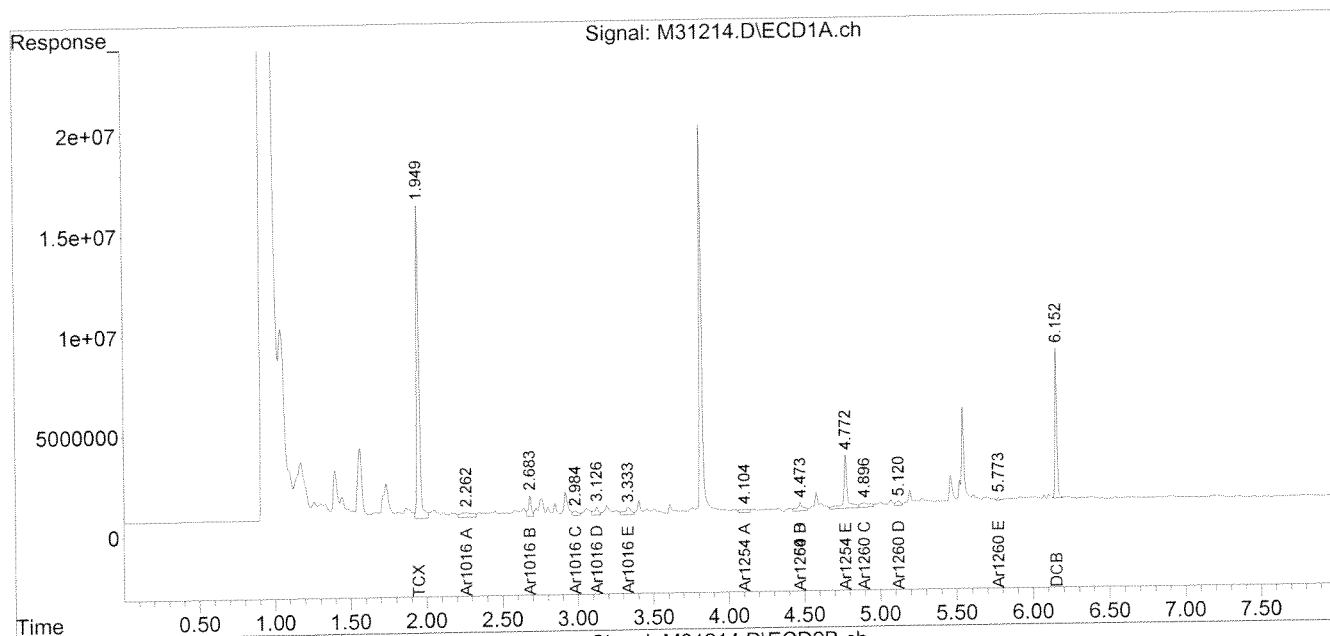


Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31214.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 3:49 pm  
Operator : JK  
Sample : 67904-15,,A/C  
Misc : SOIL  
ALS Vial : 17 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 08:50:43 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

OK  
10-05-10



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CWK-2532-0822

**Lab Sample ID:** 67904-16  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	96	%
Decachlorobiphenyl	68	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

PCB EXT Report

Authorized signature

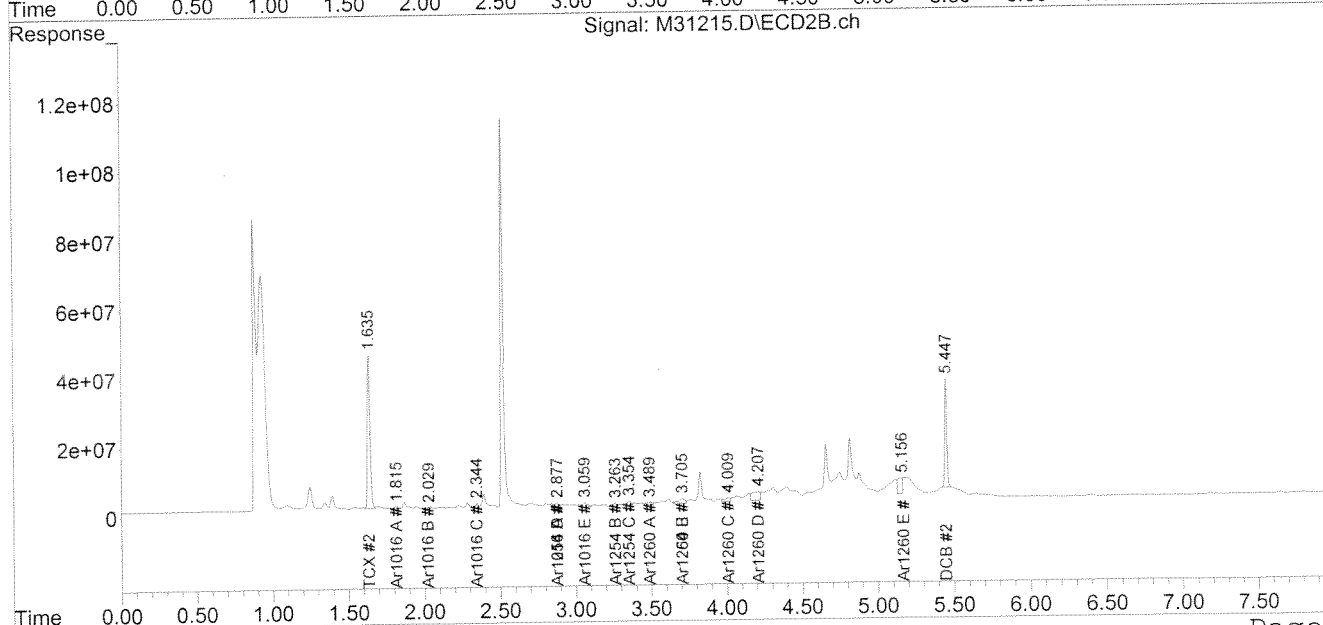
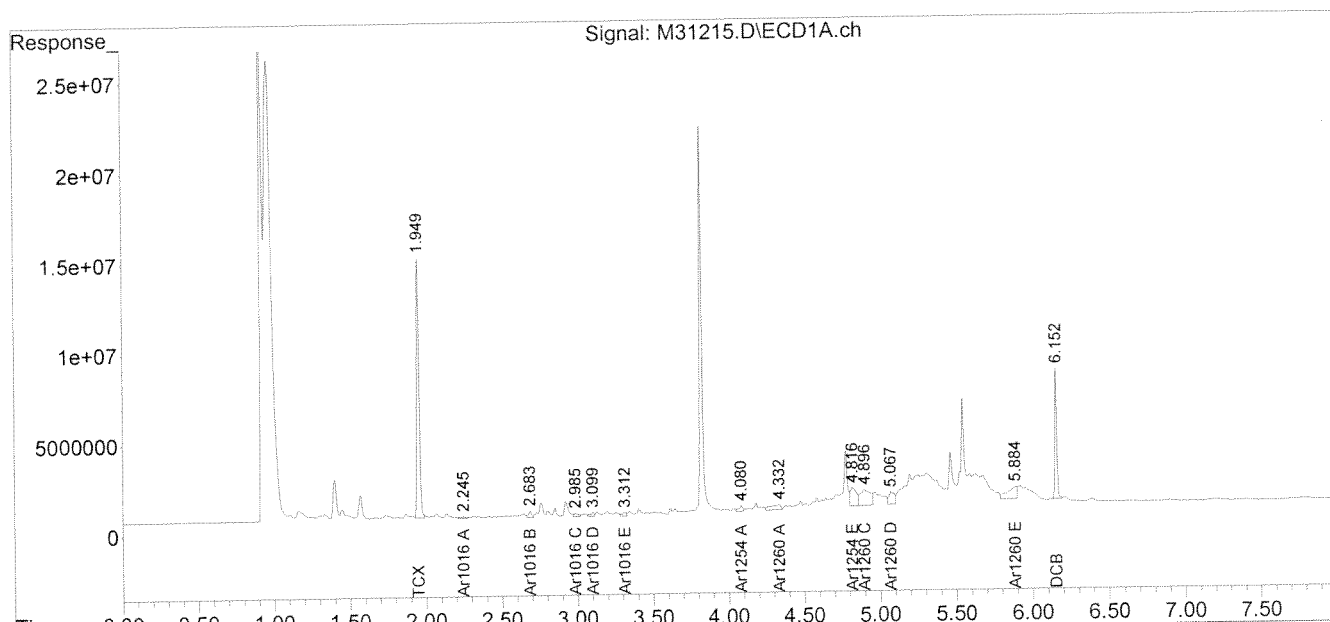


Data Path : C:\msdchem\1\DATA\100410-M\  
 Data File : M31215.D  
 Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
 Acq On : 4 Oct 2010 3:59 pm  
 Operator : JK  
 Sample : 67904-16,,A/C  
 Misc : SOIL  
 ALS Vial : 18 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Oct 05 08:51:19 2010  
 Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
 Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
 QLast Update : Tue Sep 28 09:49:19 2010  
 Response via : Initial Calibration  
 Integrator: ChemStation

Volume Inj. : 2 uL  
 Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
 Signal #1 Info : 30 m x 0.25mm x 0.25 um Signal #2 Info : 30 m x 0.25mm x 0.25 um

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10-05-10



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CBK-2532-0823

**Lab Sample ID:** 67904-17  
**Matrix:** Solid  
**Percent Solid:** 98  
**Dilution Factor:** 500  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	16500	U
PCB-1221	16500	U
PCB-1232	16500	U
PCB-1242	16500	U
PCB-1248	16500	U
PCB-1254	16500	<b>136000</b>
PCB-1260	16500	U
PCB-1262	16500	U
PCB-1268	16500	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 67904
GC Column #1: STX-CLPesticides I	Sample: 67904-17,1:50,,A/C
Column ID: 0.25 mm	Data File: M31241.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 499.8
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	136136	136518	0.3

# Column to be used to flag RPD values greater than QC limit of 40%

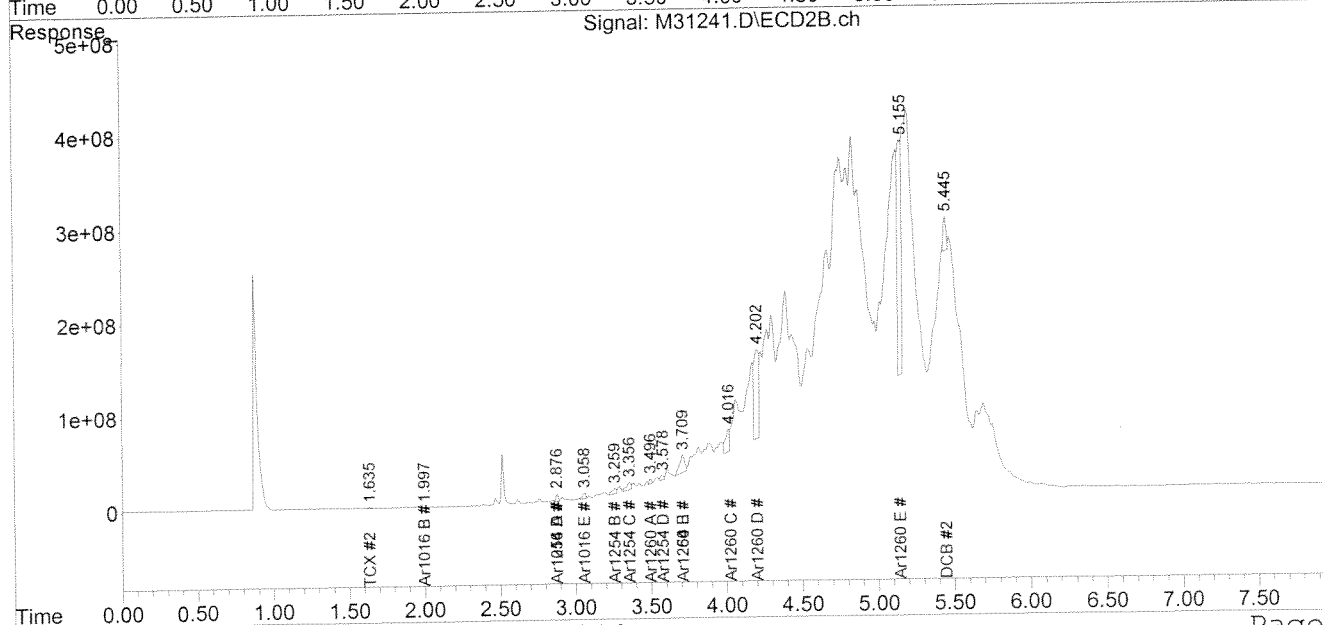
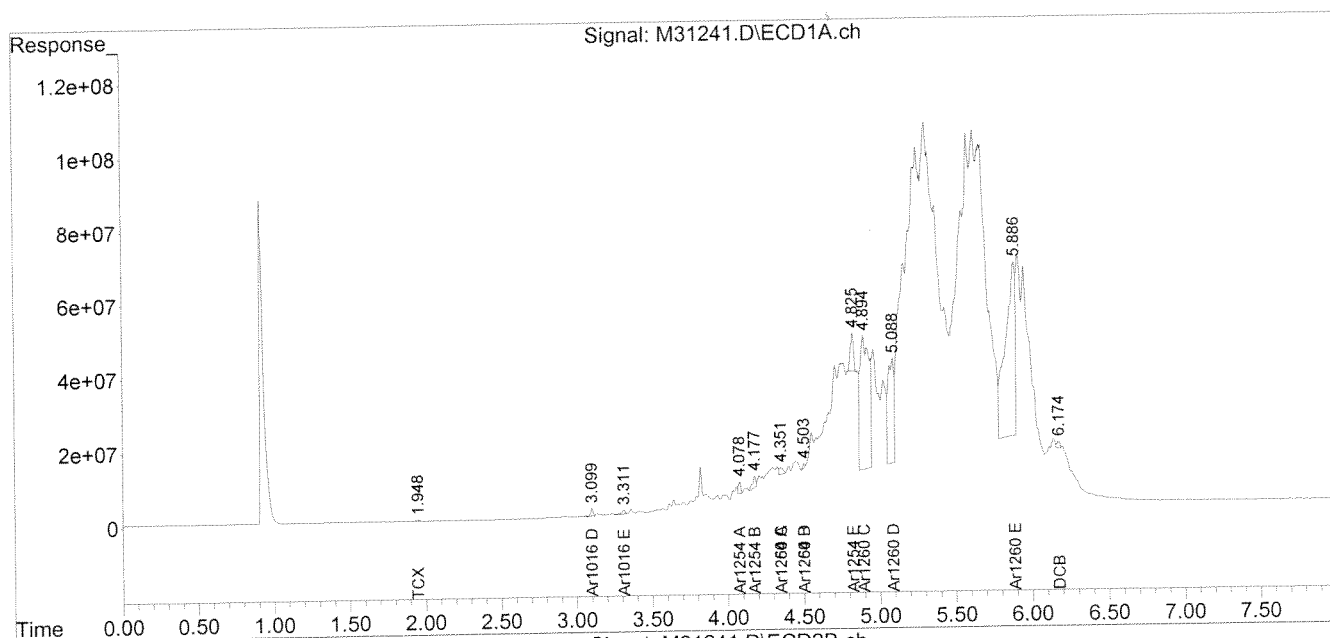
\* Values outside QC limits

Comments: \_\_\_\_\_

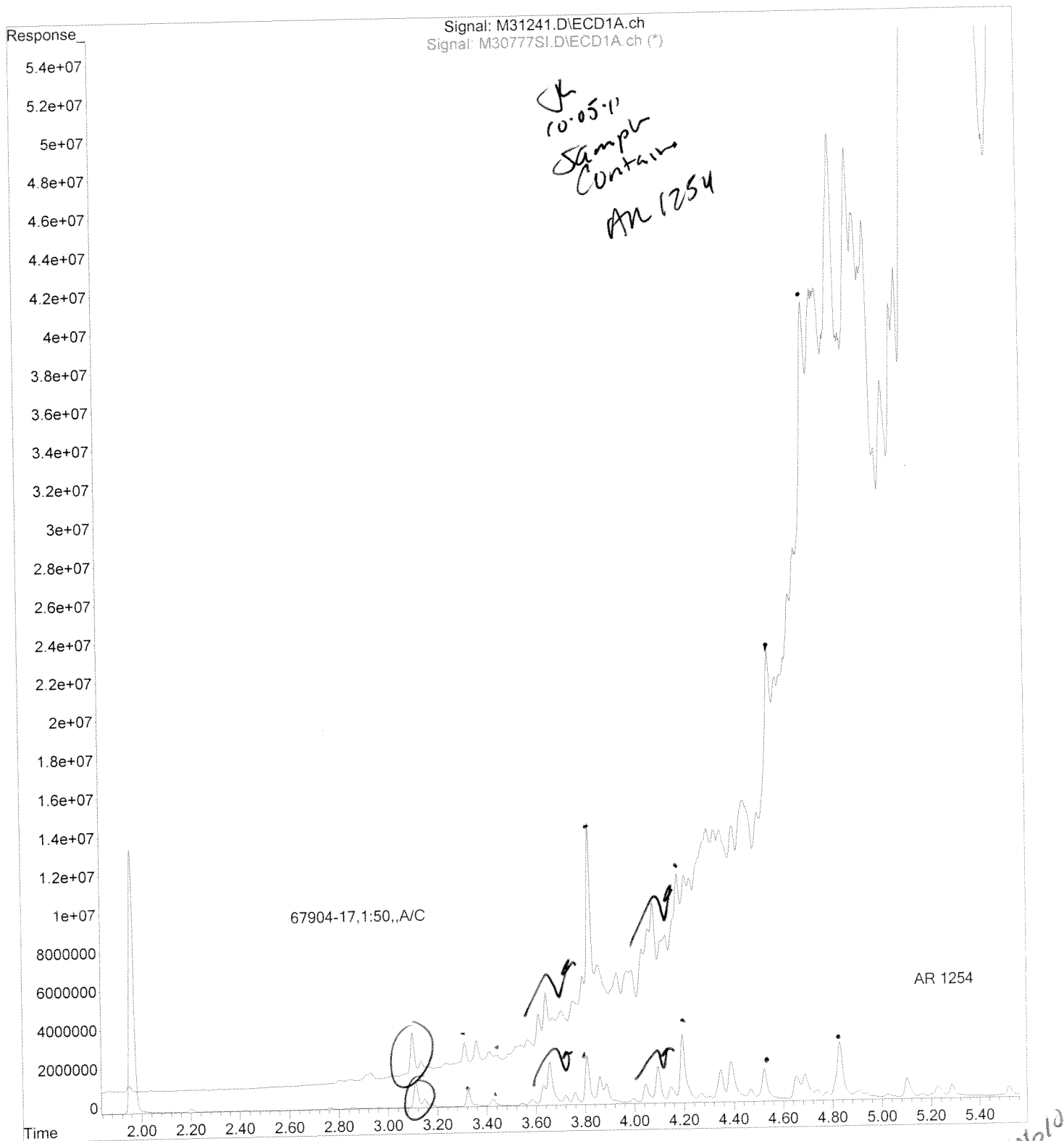
Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31241.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 8:26 pm  
Operator : JK  
Sample : 67904-17,1:50,,A/C  
Misc : SOIL  
ALS Vial : 38 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 09:58:14 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0.25 um Signal #2 Info : 30 m x 0.25mm x 0.25 um



File :C:\msdchem\1\DATA\100410-M\M31241.D  
Operator : JK  
Acquired : 4 Oct 2010 8:26 pm using AcqMethod PEST.M  
Instrument : Instrument M  
Sample Name: 67904-17,1:50,,A/C  
Misc Info : SOIL  
Vial Number: 38





Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CWT-2532-0824

**Lab Sample ID:** 67904-18  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	101	%
Decachlorobiphenyl	71	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

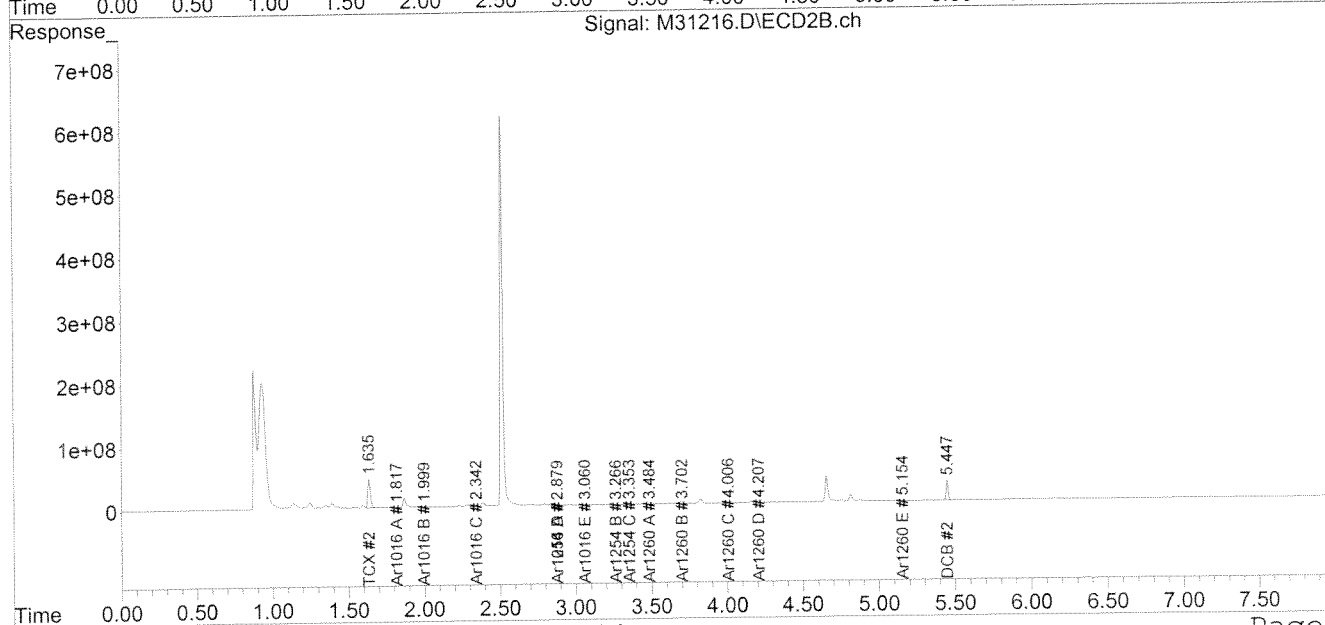
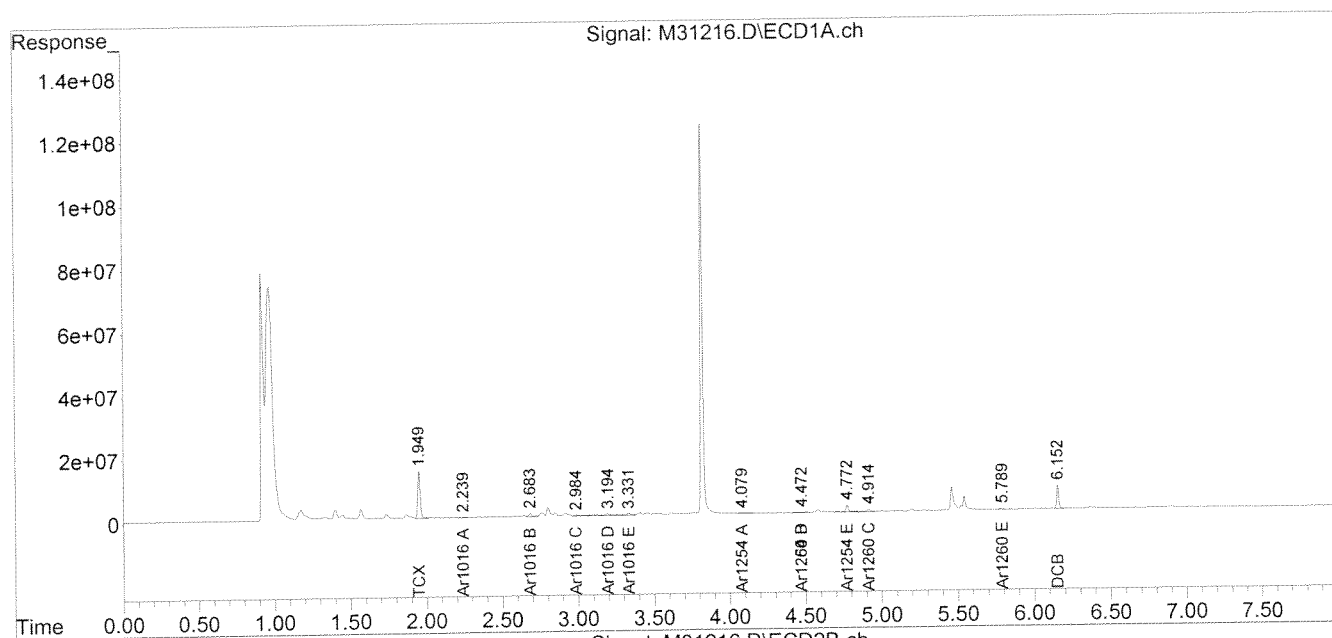


Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31216.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 4:09 pm  
Operator : JK  
Sample : 67904-18,,A/C  
Misc : SOIL  
ALS Vial : 19 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 08:51:40 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

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Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace

**Project Number:** 210980

**Field Sample ID:** PTE-CWW-2532-0825

**Lab Sample ID:** 67904-19

**Matrix:** Wipe

**Percent Solid:** N/A

**Dilution Factor:** 1.0

**Collection Date:** 09/28/10

**Lab Receipt Date:** 09/29/10

**Extraction Date:** 09/29/10

**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	105	%
Decachlorobiphenyl	75	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

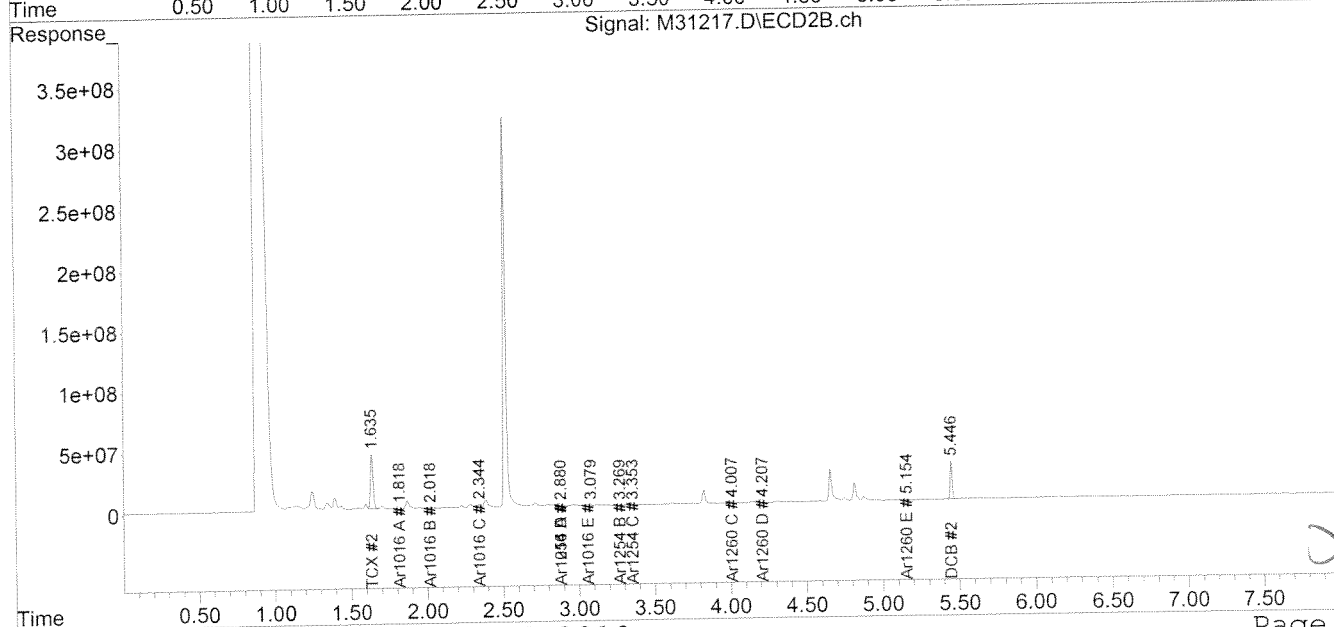
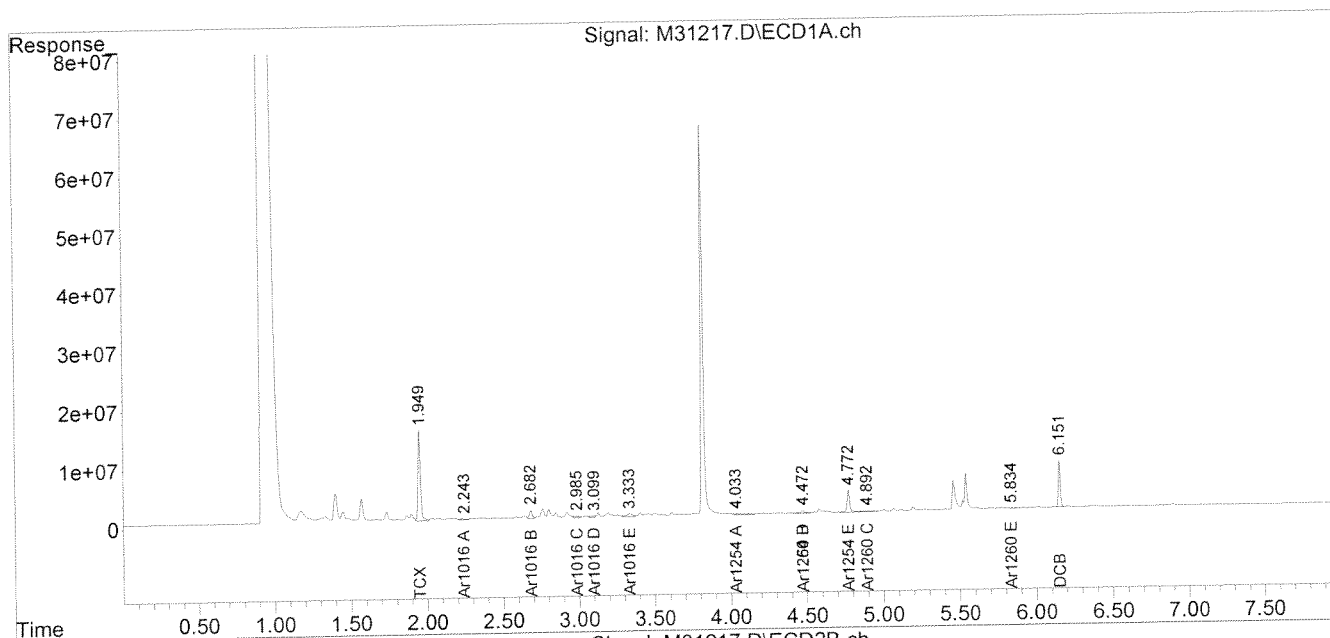
COMMENTS:

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31217.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 4:20 pm  
Operator : JK  
Sample : 67904-19,,A/C  
Misc : SOIL  
ALS Vial : 20 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 08:52:01 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

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Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

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**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CWM-2532-0826

**Lab Sample ID:** 67904-20  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b>Surrogate Standard Recovery</b>		
2,4,5,6-Tetrachloro-m-xylene	98	%
Decachlorobiphenyl	77	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

PCB EXT Report

Authorized signature

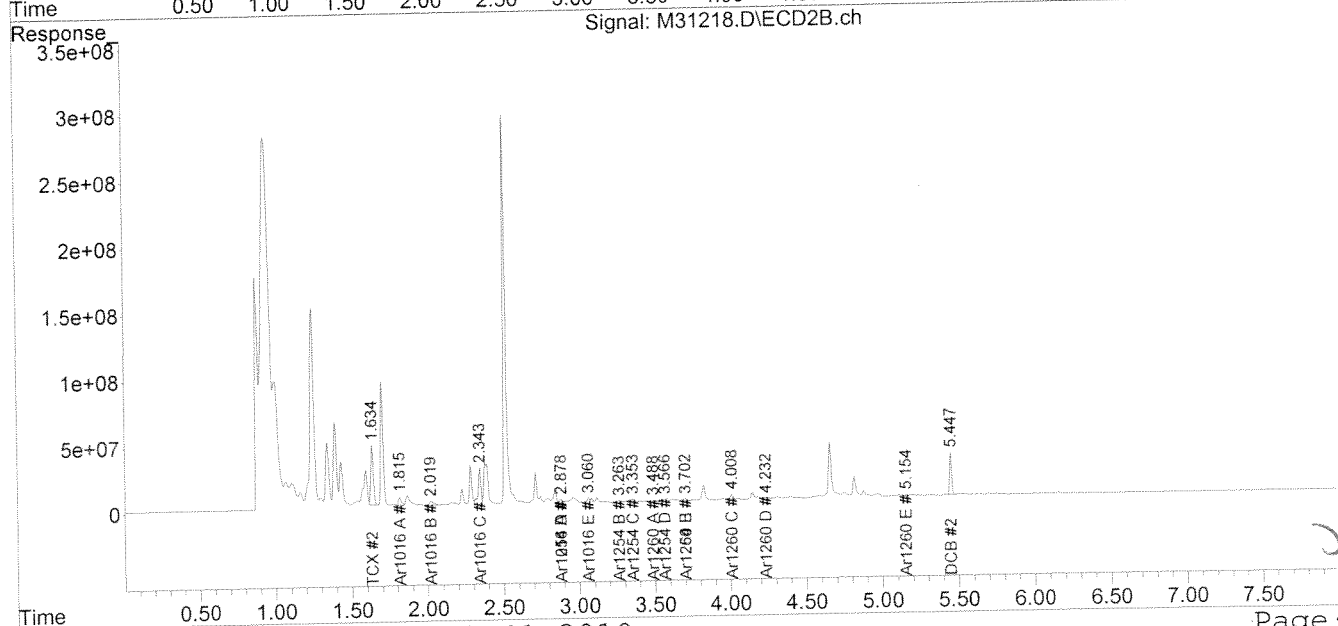
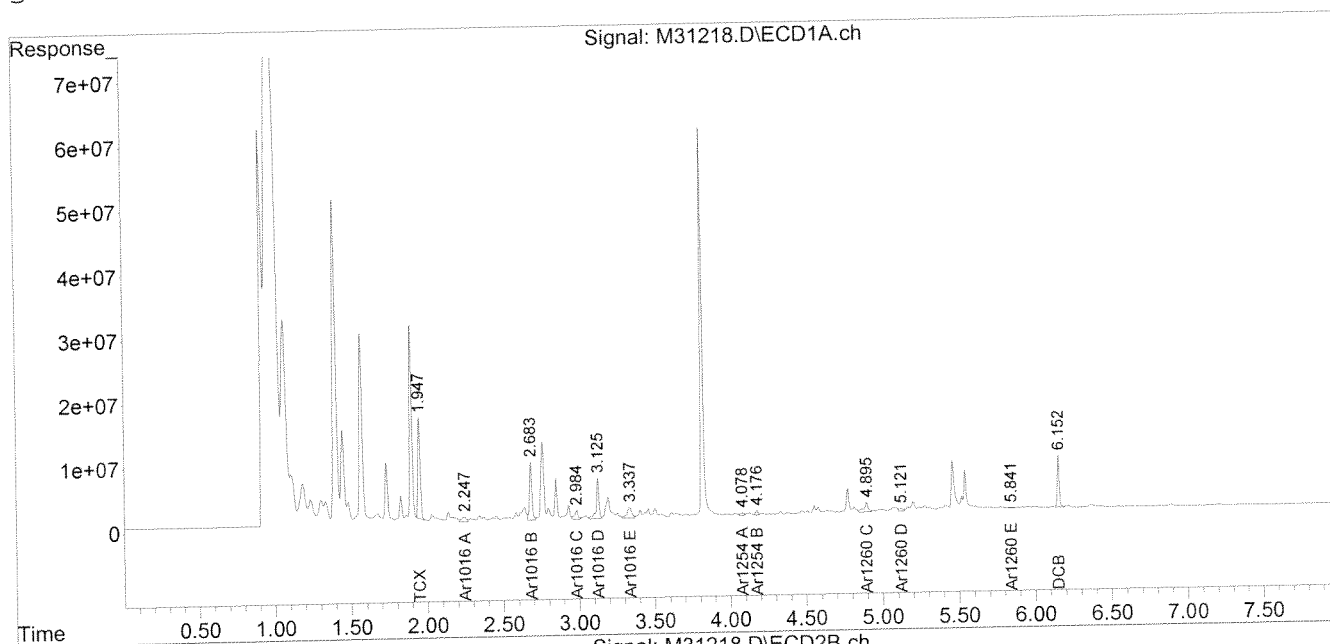


Data Path : C:\msdchem\1\DATA\100410-M\  
 Data File : M31218.D  
 Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
 Acq On : 4 Oct 2010 4:30 pm  
 Operator : JK  
 Sample : 67904-20,,A/C  
 Misc : SOIL  
 ALS Vial : 21 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Oct 05 08:52:32 2010  
 Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
 Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
 QLast Update : Tue Sep 28 09:49:19 2010  
 Response via : Initial Calibration  
 Integrator: ChemStation

Volume Inj. : 2 uL  
 Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
 Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

JK  
10-05-10



JK  
10-05-10

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

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**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CWK-24517-0828

**Lab Sample ID:** 67904-21  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	95	%
Decachlorobiphenyl	74	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

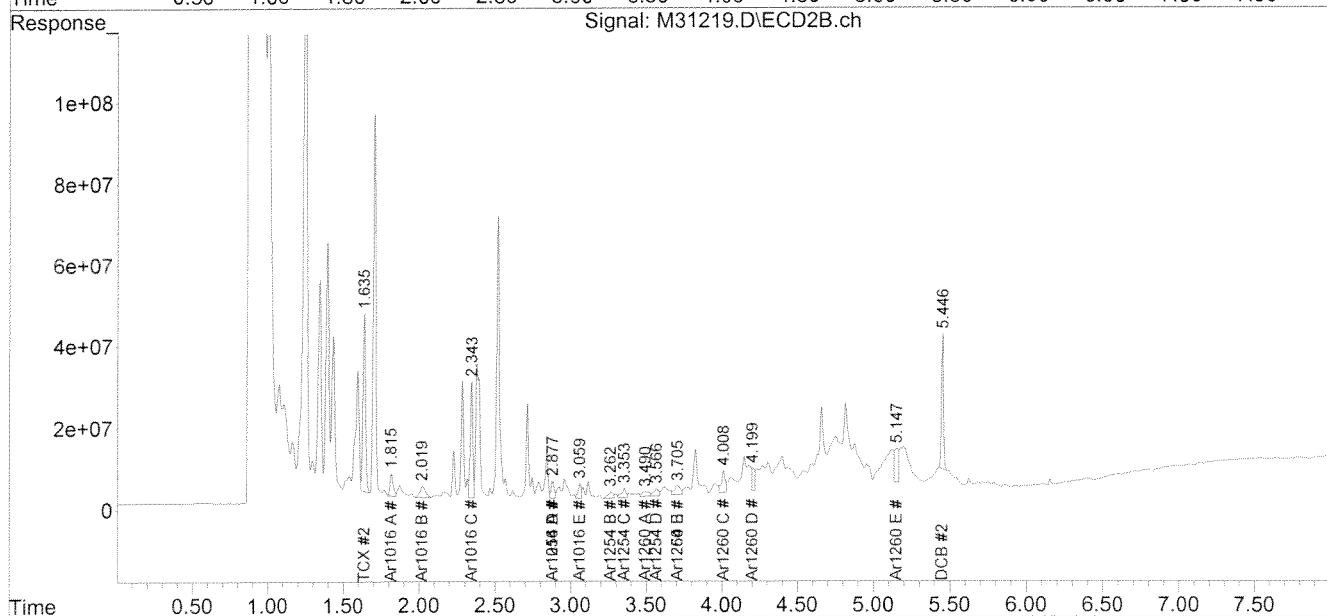
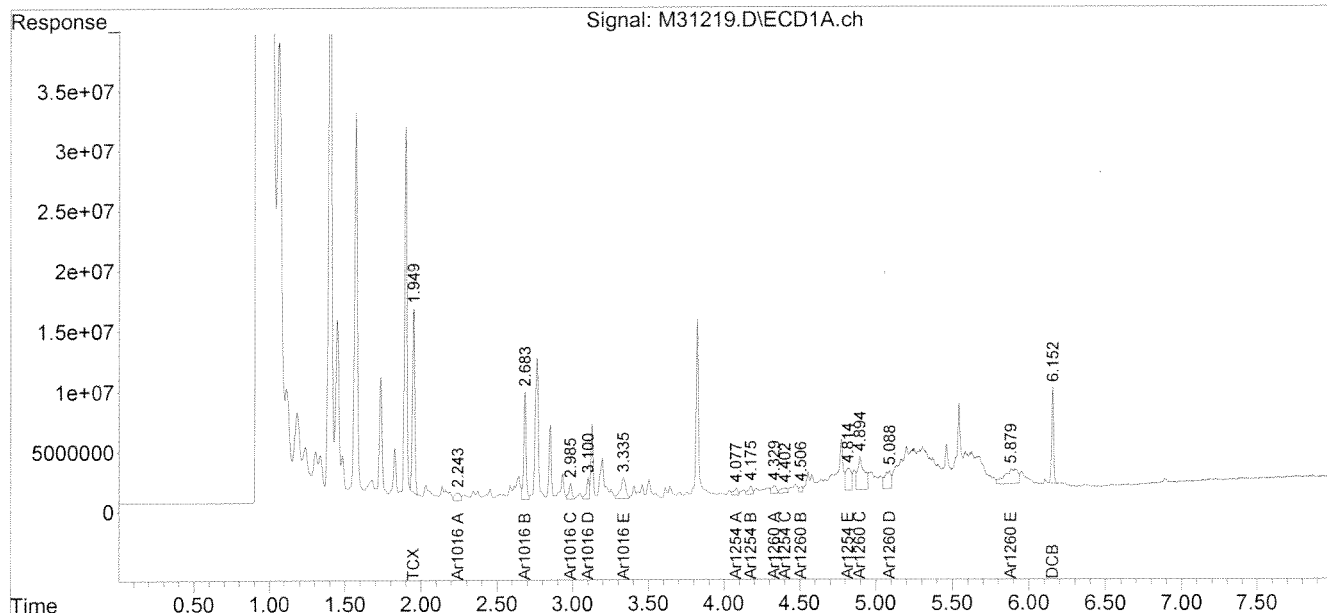
COMMENTS:

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31219.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 4:40 pm  
Operator : JK  
Sample : 67904-21,,A/C  
Misc : SOIL  
ALS Vial : 22 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 08:53:16 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

JK  
10-05-10





Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CWK-24517-0829

**Lab Sample ID:** 67904-22  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	94	%
Decachlorobiphenyl	69	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

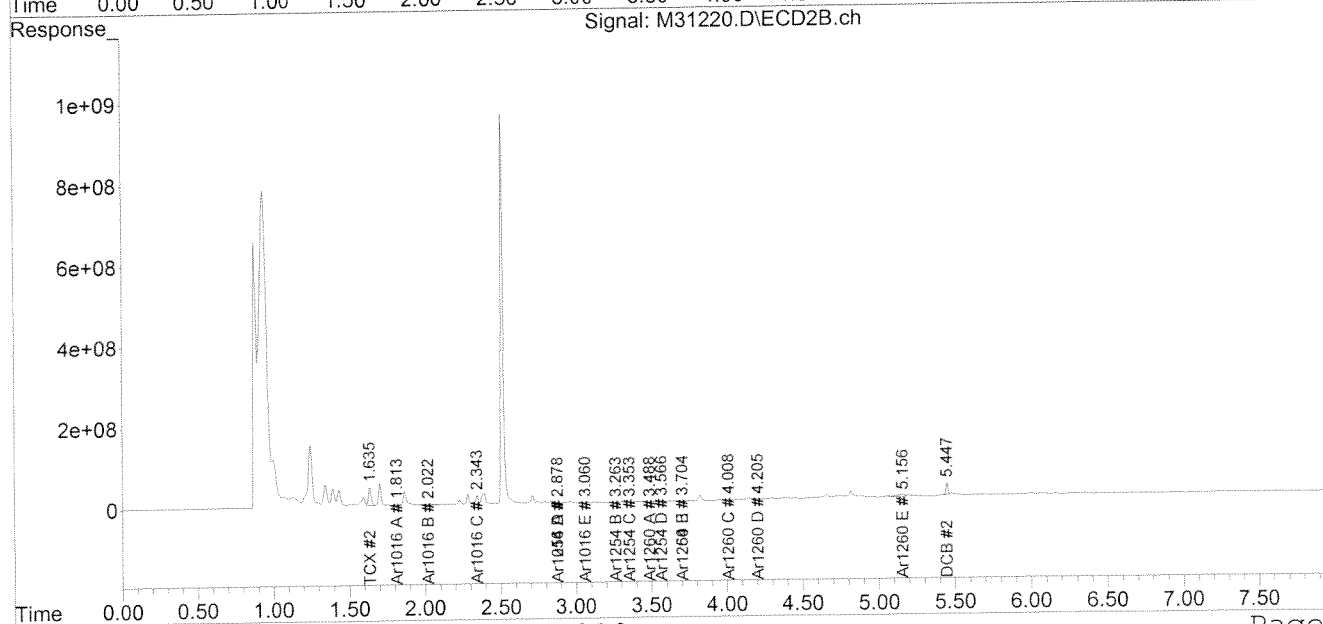
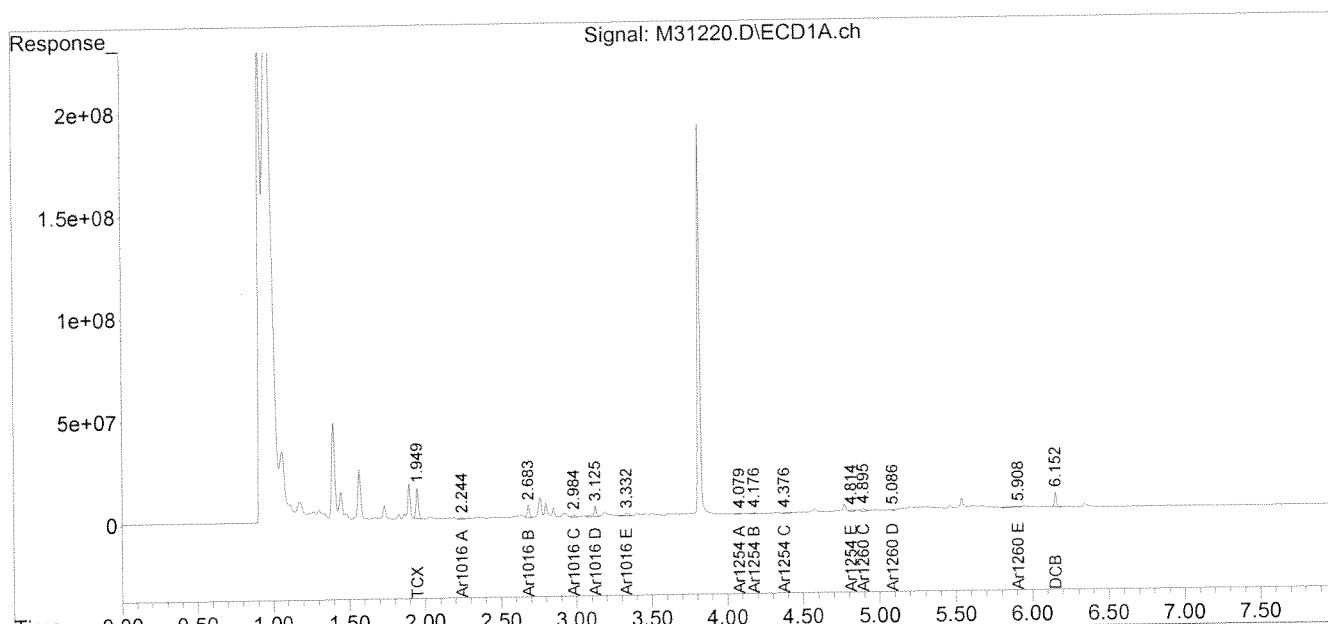
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

Data Path : C:\msdchem\1\DATA\100410-M\  
 Data File : M31220.D  
 Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
 Acq On : 4 Oct 2010 4:50 pm  
 Operator : JK  
 Sample : 67904-22,,A/C  
 Misc : SOIL  
 ALS Vial : 23 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Oct 05 08:53:55 2010  
 Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
 Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
 QLast Update : Tue Sep 28 09:49:19 2010  
 Response via : Initial Calibration  
 Integrator: ChemStation

Volume Inj. : 2 uL  
 Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
 Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CBK-24517-0830

**Lab Sample ID:** 67904-23  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 238  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	7850	U
PCB-1221	7850	U
PCB-1232	7850	U
PCB-1242	7850	U
PCB-1248	7850	U
PCB-1254	7850	<b>38500</b>
PCB-1260	7850	U
PCB-1262	7850	U
PCB-1268	7850	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.



PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 67904

GC Column #1: STX-CLPesticides I

Sample: 67904-23,1:25,,A/C

Column ID: 0.25 mm

Data File: M31242.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 237.7

Column ID: 0.25 mm

COMPOUND	Column #1	Column #2	RPD		#
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	38487	27750	32.4		

# Column to be used to flag RPD values greater than QC limit of 40%

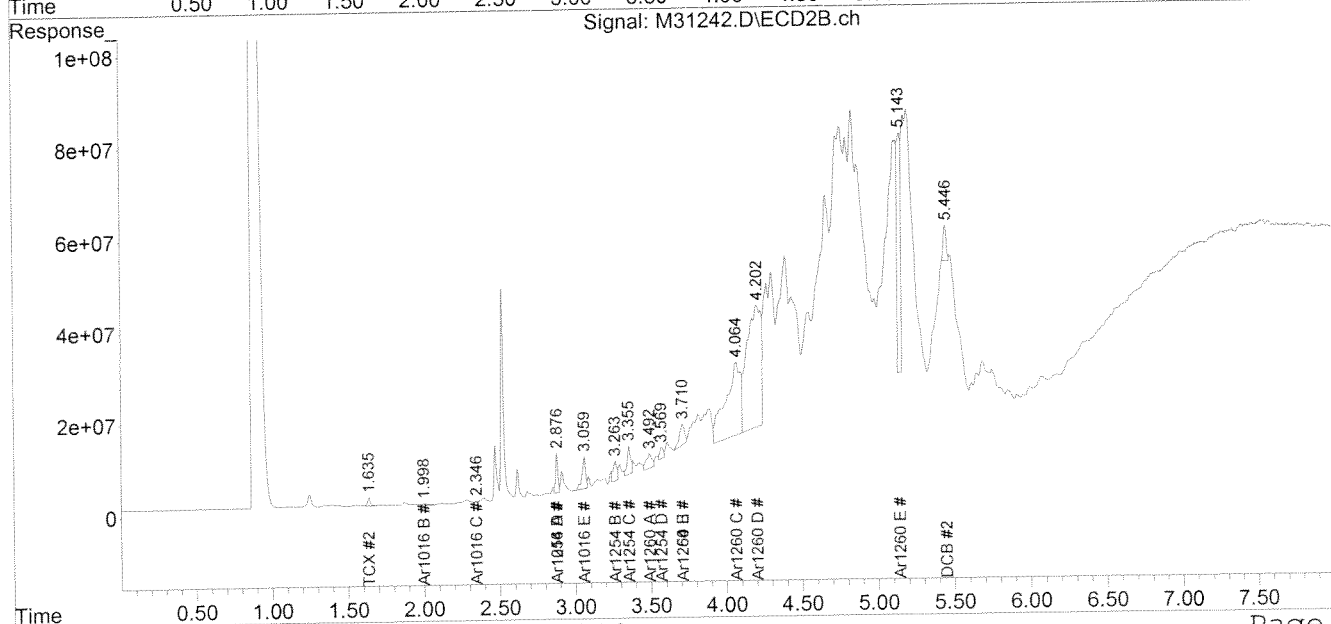
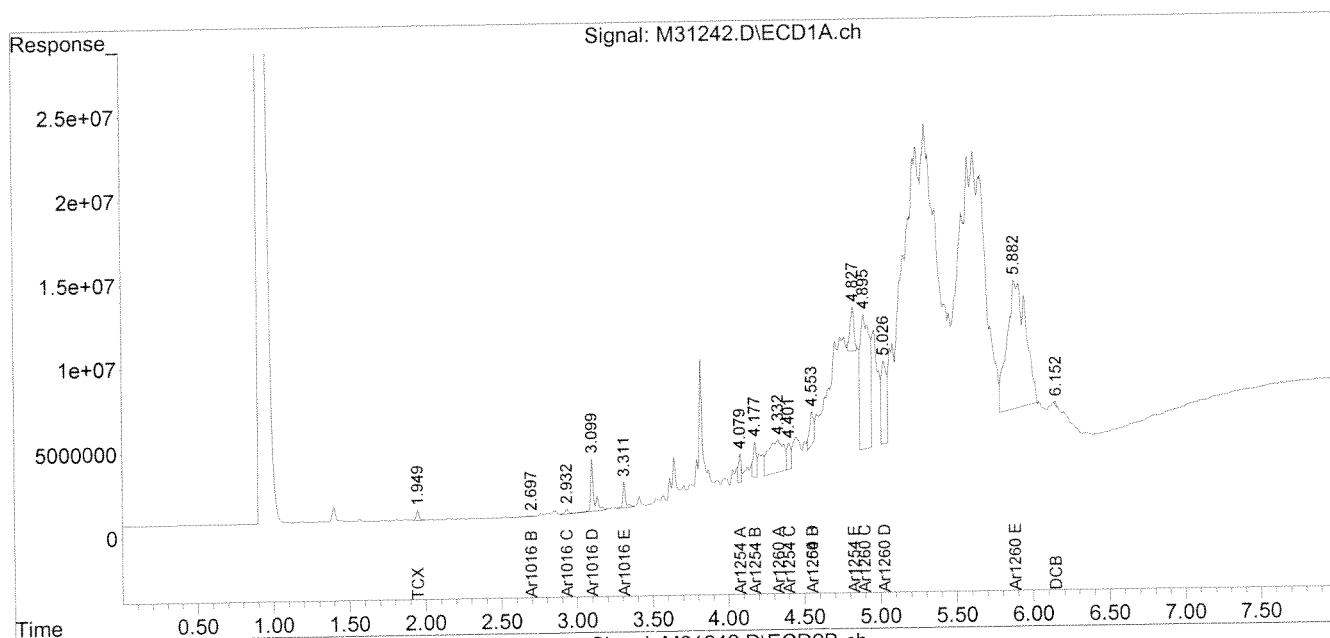
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31242.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 8:36 pm  
Operator : JK  
Sample : 67904-23,1:25,,A/C  
Misc : SOIL  
ALS Vial : 39 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 10:00:21 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0.25 um Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CBK-24517-0831

**Lab Sample ID:** 67904-24  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 506  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	16700	U
PCB-1221	16700	U
PCB-1232	16700	U
PCB-1242	16700	U
PCB-1248	16700	U
PCB-1254	16700	<b>181000</b>
PCB-1260	16700	U
PCB-1262	16700	U
PCB-1268	16700	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.



PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 67904

GC Column #1: STX-CLPesticides I

Sample: 67904-24,1:50,,A/C

Column ID: 0.25 mm

Data File: M31243.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 506.2

Column ID: 0.25 mm

COMPOUND	Column #1	Column #2	RPD		#
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	124525	181097	37.0		

# Column to be used to flag RPD values greater than QC limit of 40%

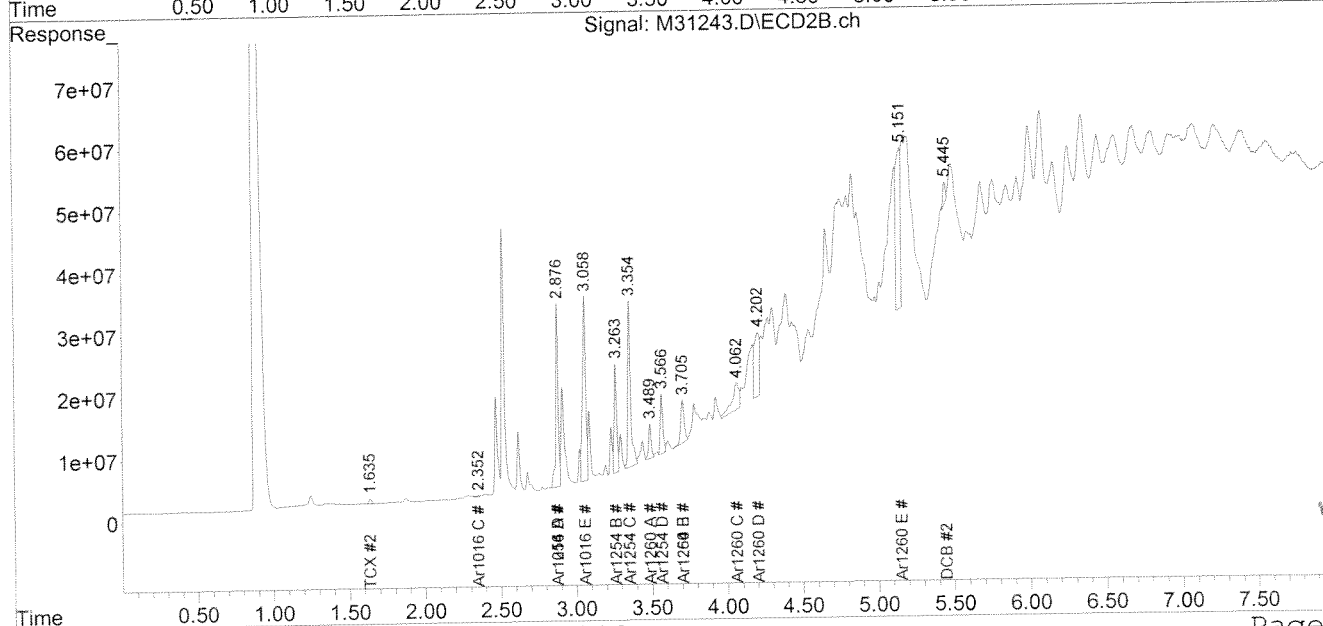
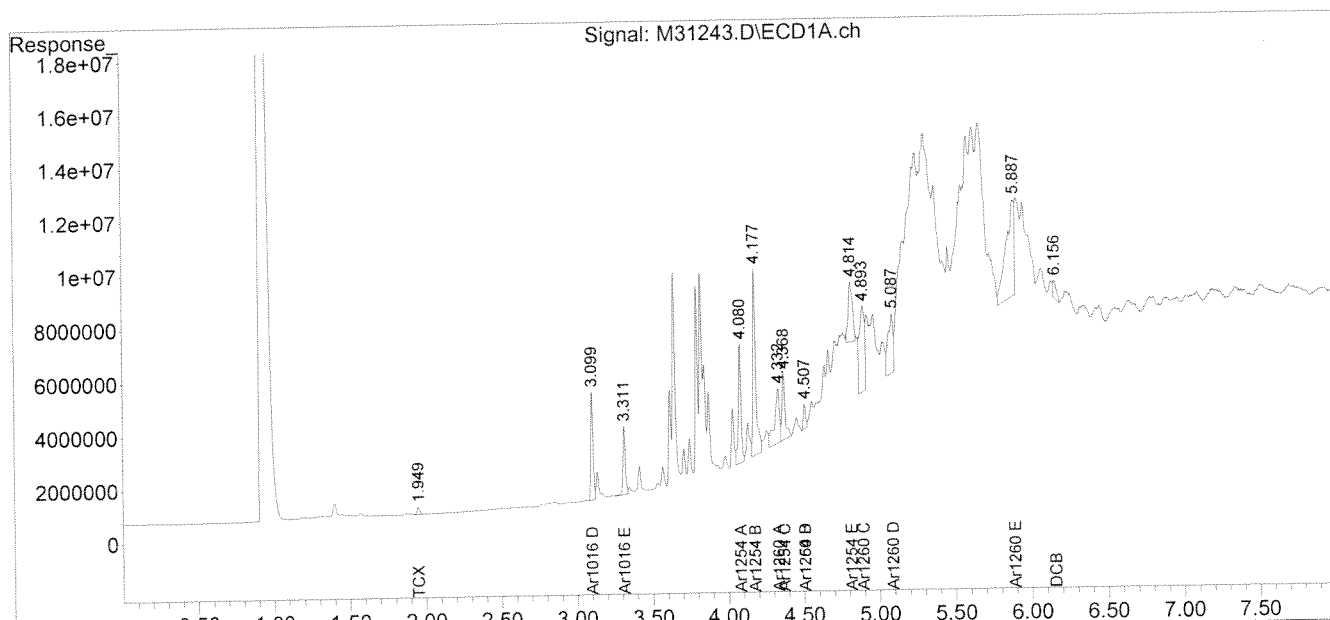
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
 Data File : M31243.D  
 Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
 Acq On : 4 Oct 2010 8:46 pm  
 Operator : JK  
 Sample : 67904-24,1:50,,A/C  
 Misc : SOIL  
 ALS Vial : 40 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Oct 05 10:01:39 2010  
 Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
 Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
 QLast Update : Tue Sep 28 09:49:19 2010  
 Response via : Initial Calibration  
 Integrator: ChemStation

Volume Inj. : 2 uL  
 Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
 Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CBKD-24517-0832

**Lab Sample ID:** 67904-25  
**Matrix:** Solid  
**Percent Solid:** 97  
**Dilution Factor:** 402  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	13300	U
PCB-1221	13300	U
PCB-1232	13300	U
PCB-1242	13300	U
PCB-1248	13300	U
PCB-1254	13300	<b>147000</b>
PCB-1260	13300	U
PCB-1262	13300	U
PCB-1268	13300	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.



PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 67904

GC Column #1: STX-CLPesticides I

Sample: 67904-25,1:50,,A/C

Column ID: 0.25 mm

Data File: M31244.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 401.8

Column ID: 0.25 mm

COMPOUND	Column #1	Column #2	RPD		#
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	111418	147472	27.9		

# Column to be used to flag RPD values greater than QC limit of 40%

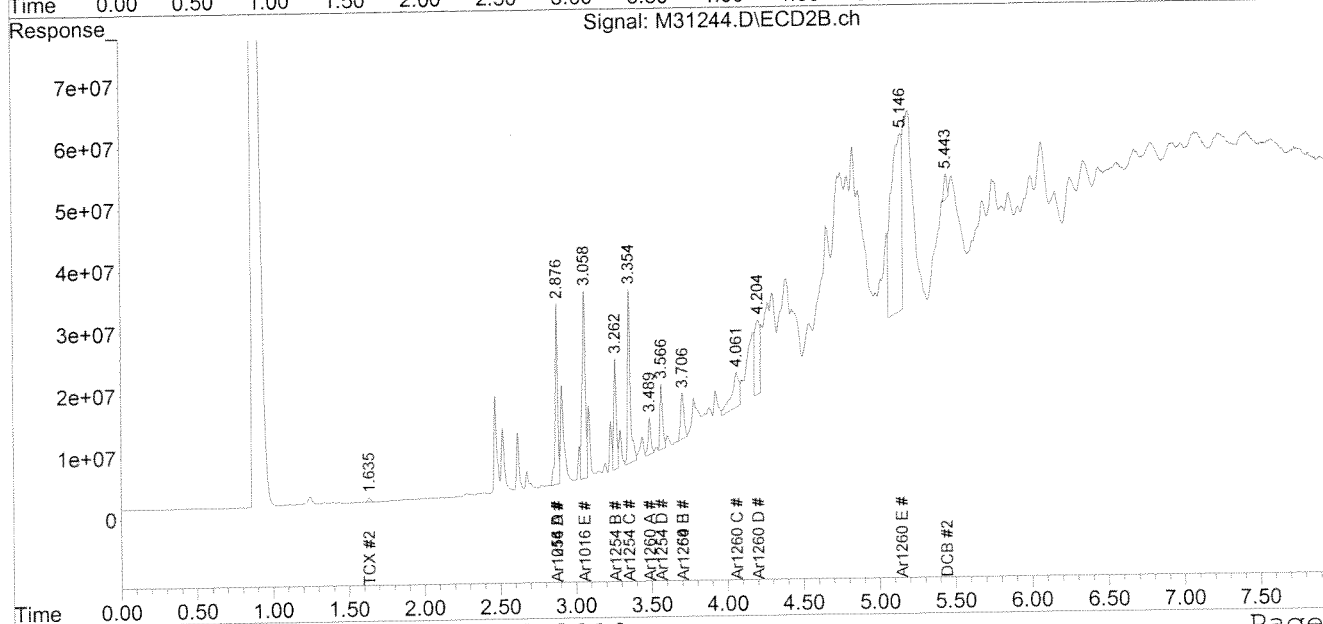
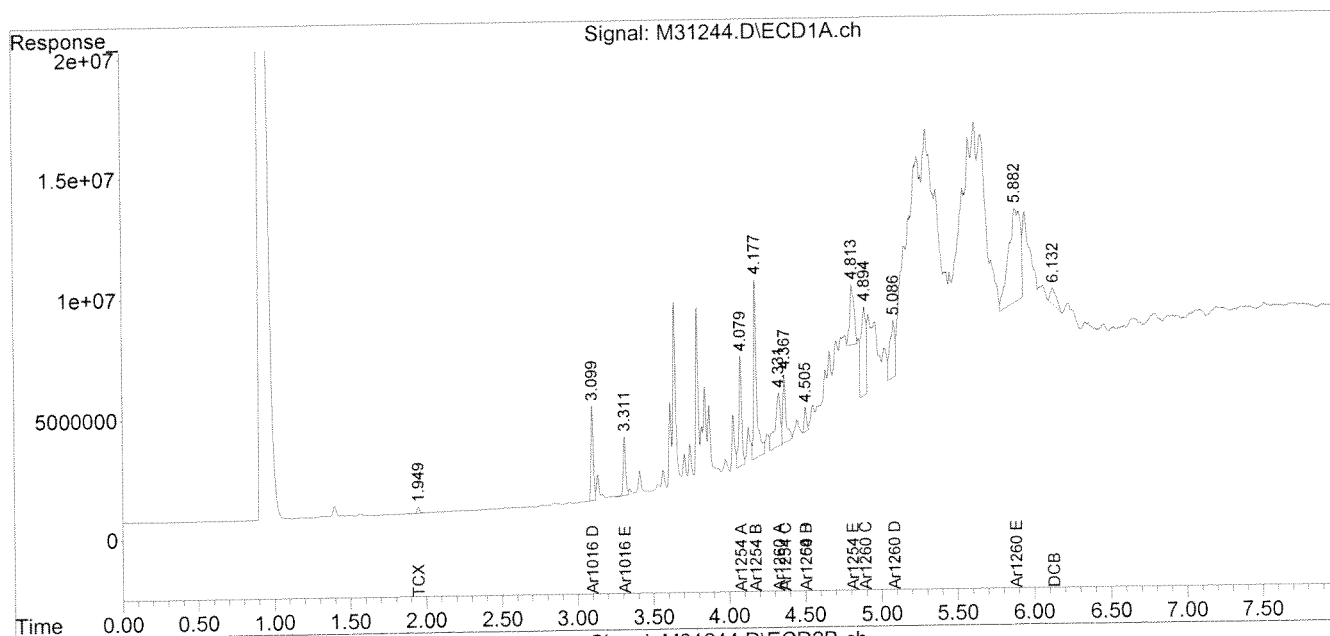
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
 Data File : M31244.D  
 Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
 Acq On : 4 Oct 2010 8:56 pm  
 Operator : JK  
 Sample : 67904-25,1:50,,A/C  
 Misc : SOIL  
 ALS Vial : 41 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Oct 05 10:02:47 2010  
 Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
 Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
 QLast Update : Tue Sep 28 09:49:19 2010  
 Response via : Initial Calibration  
 Integrator: ChemStation

Volume Inj. : 2 uL  
 Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
 Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



21020

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**  
**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CBK-24517-0833

**Lab Sample ID:** 67904-26  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 9480  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

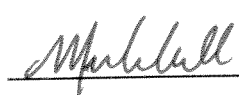
**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	313000	U
PCB-1221	313000	U
PCB-1232	313000	U
PCB-1242	313000	U
PCB-1248	313000	U
PCB-1254	313000	<b>3420000</b>
PCB-1260	313000	U
PCB-1262	313000	U
PCB-1268	313000	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.



PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 67904

GC Column #1: STX-CLPesticides I

Sample: 67904-26,1:1000,,A/C

Column ID: 0.25 mm

Data File: M31245.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 9475.6

Column ID: 0.25 mm

COMPOUND	Column #1	Column #2	RPD		#
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	3416016	2908783	16.0		

# Column to be used to flag RPD values greater than QC limit of 40%

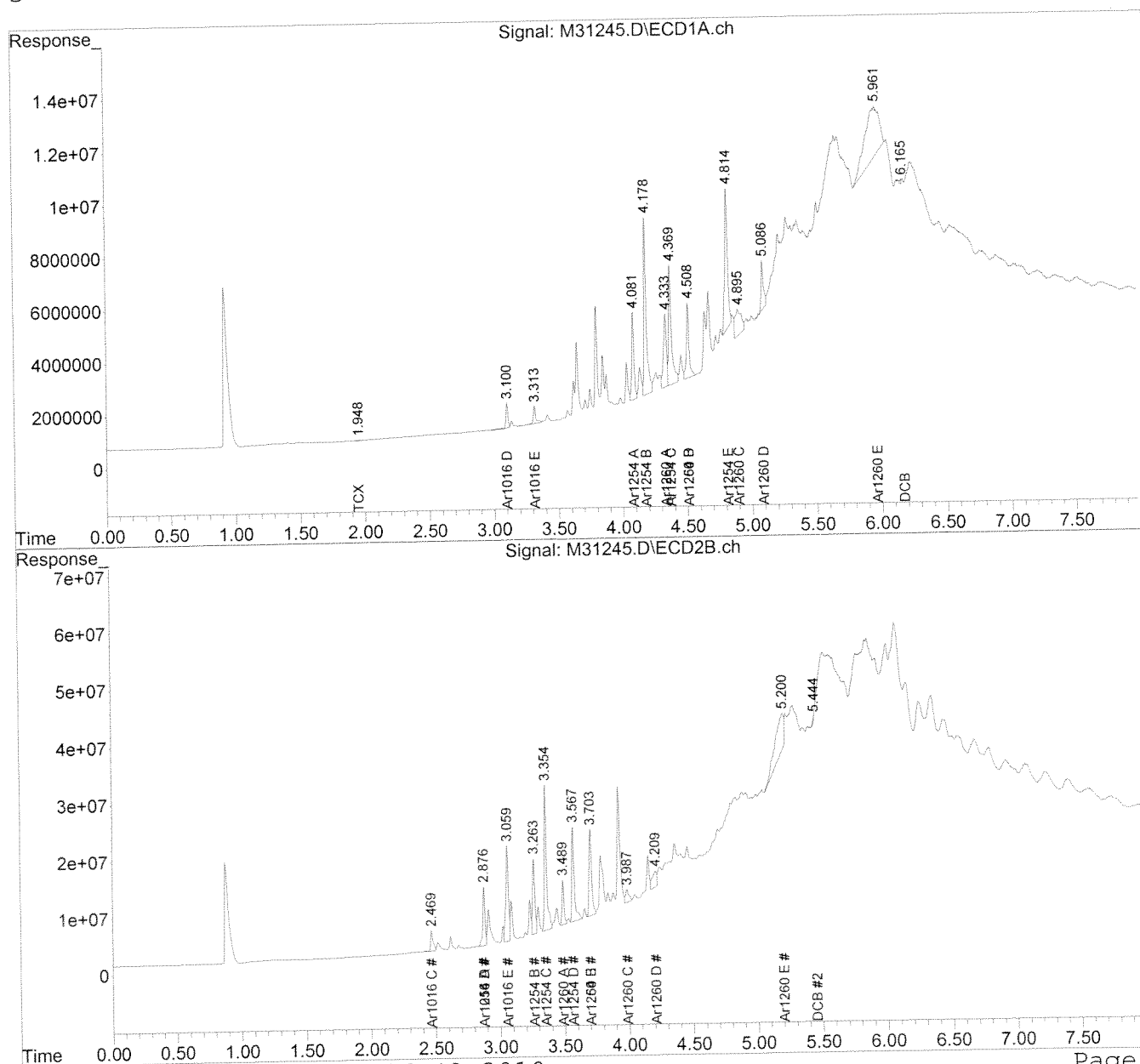
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31245.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 9:07 pm  
Operator : JK  
Sample : 67904-26,1:1000,,A/C  
Misc : SOIL  
ALS Vial : 42 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 10:06:33 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

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**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CBK-24517-0834

**Lab Sample ID:** 67904-27  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 895  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	29500	U
PCB-1221	29500	U
PCB-1232	29500	U
PCB-1242	29500	U
PCB-1248	29500	U
PCB-1254	29500	<b>257000</b>
PCB-1260	29500	U
PCB-1262	29500	U
PCB-1268	29500	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 67904
GC Column #1: STX-CLPesticides I	Sample: 67904-27,1:100,,A/C
Column ID: 0.25 mm	Data File: M31246.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 895.4
Column ID: 0.25 mm	

Column #1		Column #2		RPD	#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	257421	179847		35.5	

# Column to be used to flag RPD values greater than QC limit of 40%

\* Values outside QC limits

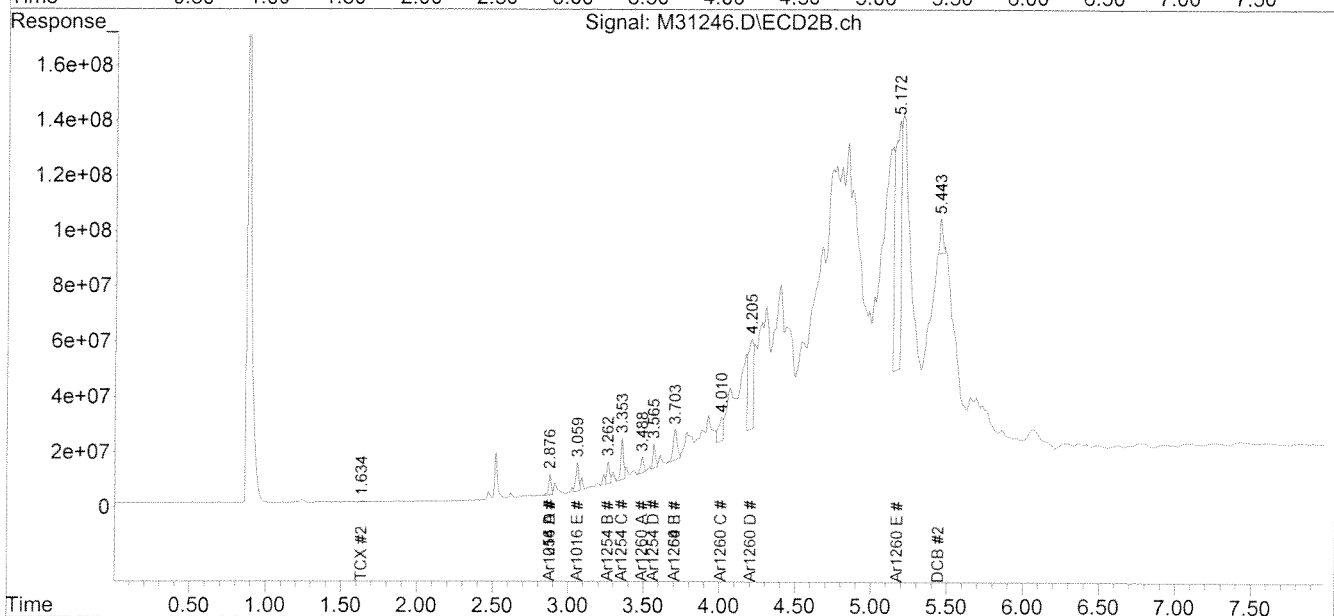
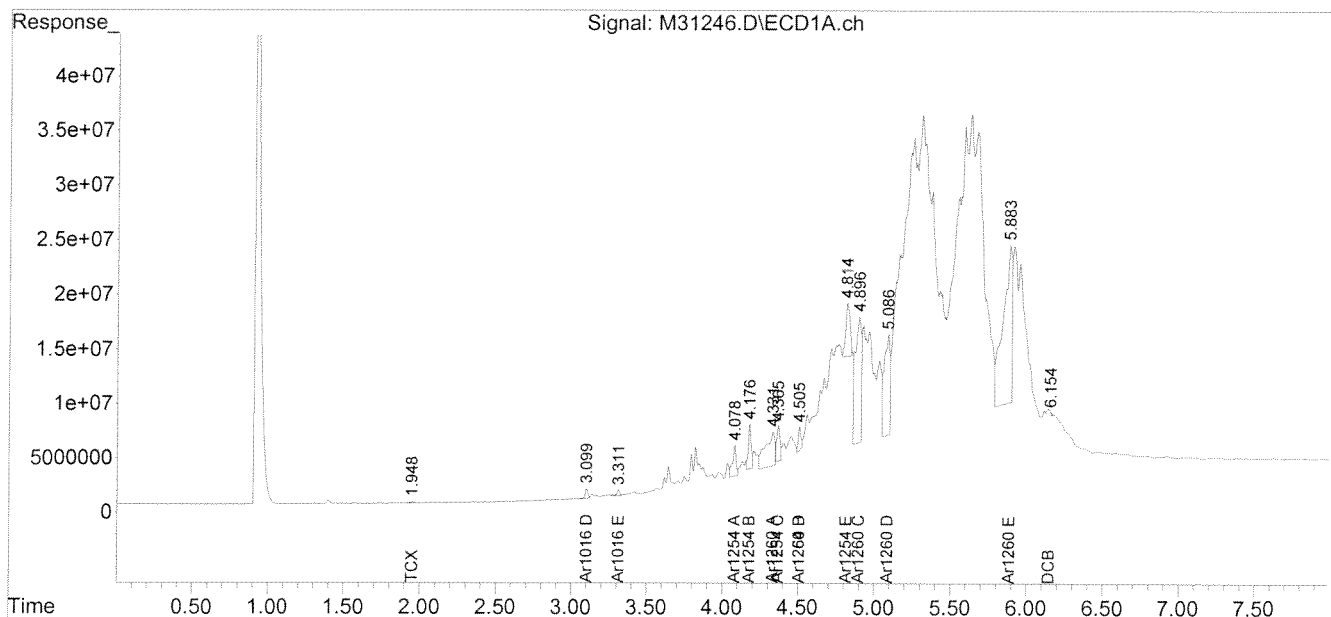
Comments: \_\_\_\_\_



Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31246.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 9:17 pm  
Operator : JK  
Sample : 67904-27,1:100,,A/C  
Misc : SOIL  
ALS Vial : 43 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 10:08:02 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CBC-24517-0835

**Lab Sample ID:** 67904-28  
**Matrix:** Solid  
**Percent Solid:** 98  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	82	%
Decachlorobiphenyl	64	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

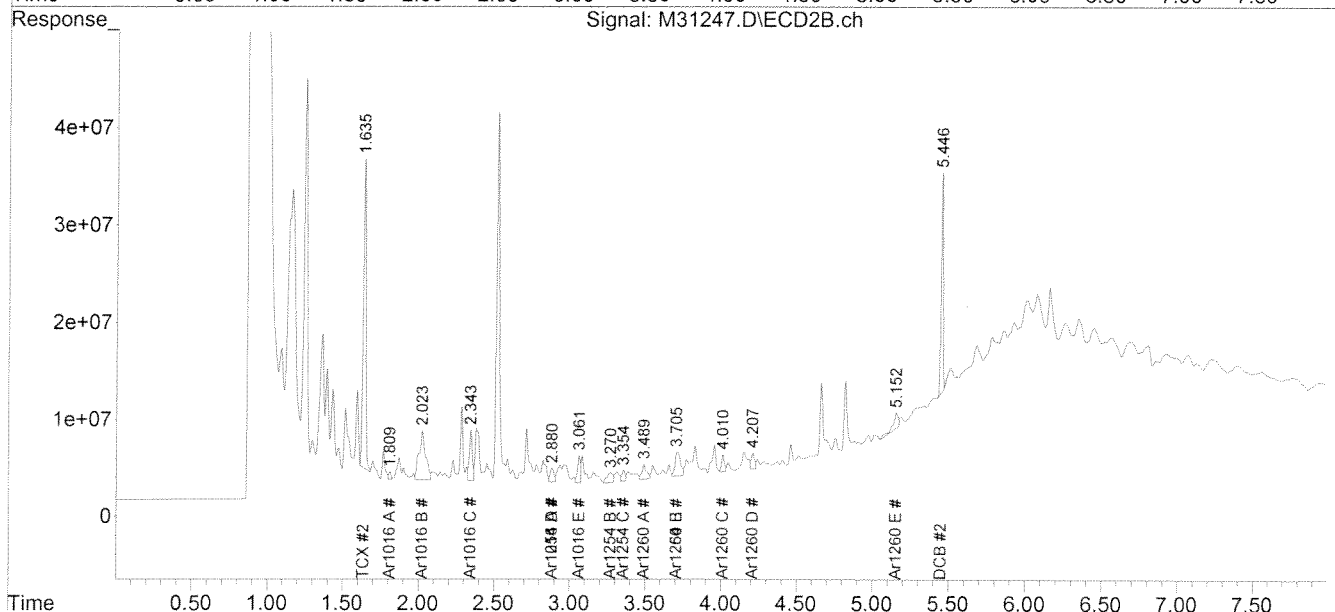
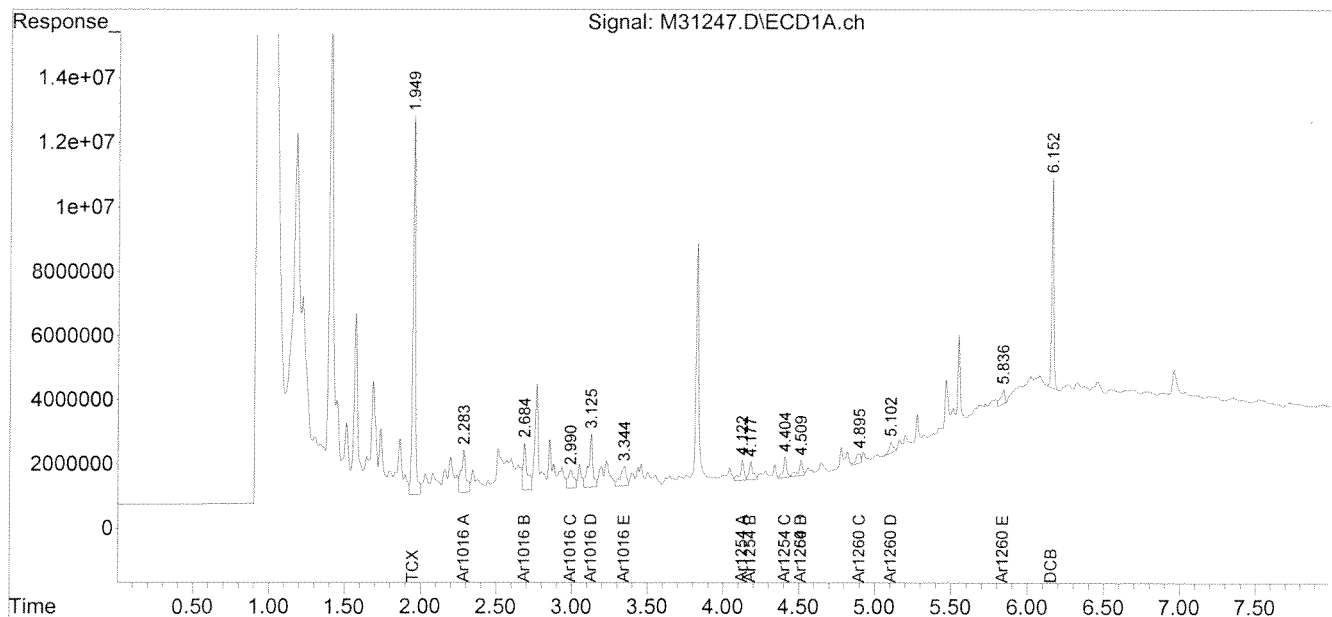
COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31247.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 9:27 pm  
Operator : JK  
Sample : 67904-28,,A/C  
Misc : SOIL  
ALS Vial : 44 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 10:09:11 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

JK  
10-25-10



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CBCD-24517-0836

**Lab Sample ID:** 67904-29  
**Matrix:** Solid  
**Percent Solid:** 97  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b>Surrogate Standard Recovery</b>		
2,4,5,6-Tetrachloro-m-xylene	89	%
Decachlorobiphenyl	68	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

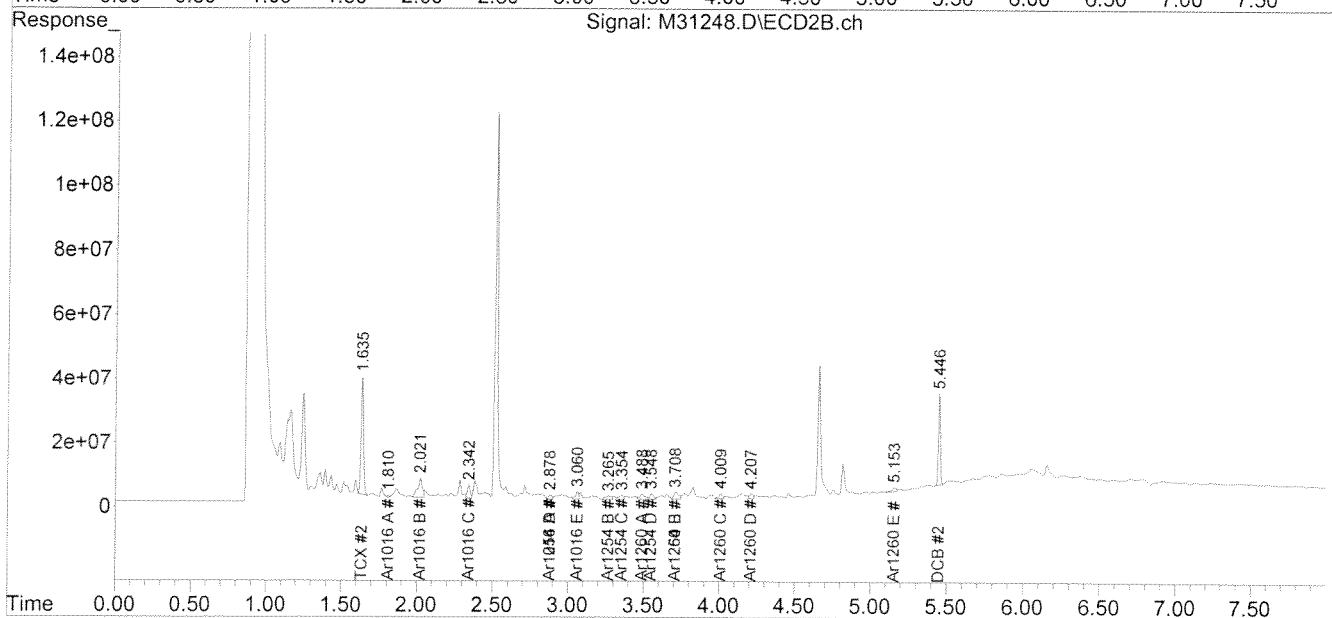
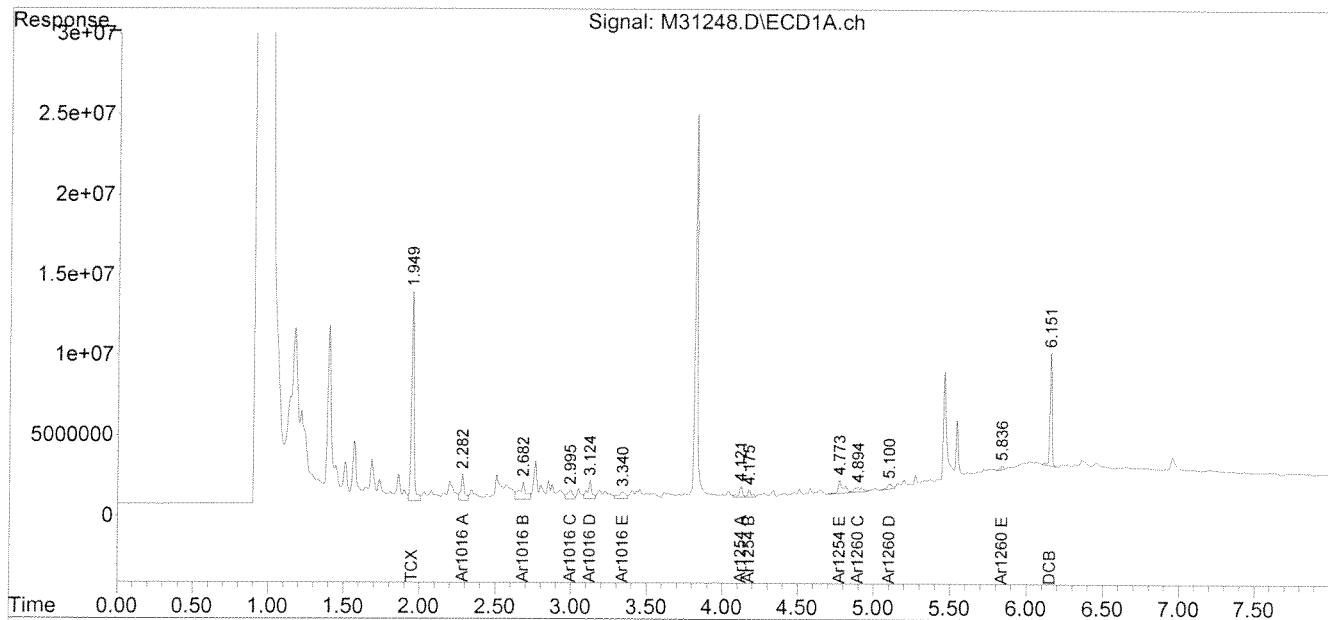
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31248.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 9:38 pm  
Operator : JK  
Sample : 67904-29,,A/C  
Misc : SOIL  
ALS Vial : 45 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 10:09:28 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CBC-24517-0837

**Lab Sample ID:** 67904-30  
**Matrix:** Solid  
**Percent Solid:** 100  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	<b>276</b>
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	99	%
Decachlorobiphenyl	67	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 67904

GC Column #1: STX-CLPesticides I

Sample: 67904-30,,A/C

Column ID: 0.25 mm

Data File: M31249.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 1.0

Column ID: 0.25 mm

COMPOUND	Column #1	Column #2	RPD		#
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	258	276	6.5		

# Column to be used to flag RPD values greater than QC limit of 40%

\* Values outside QC limits

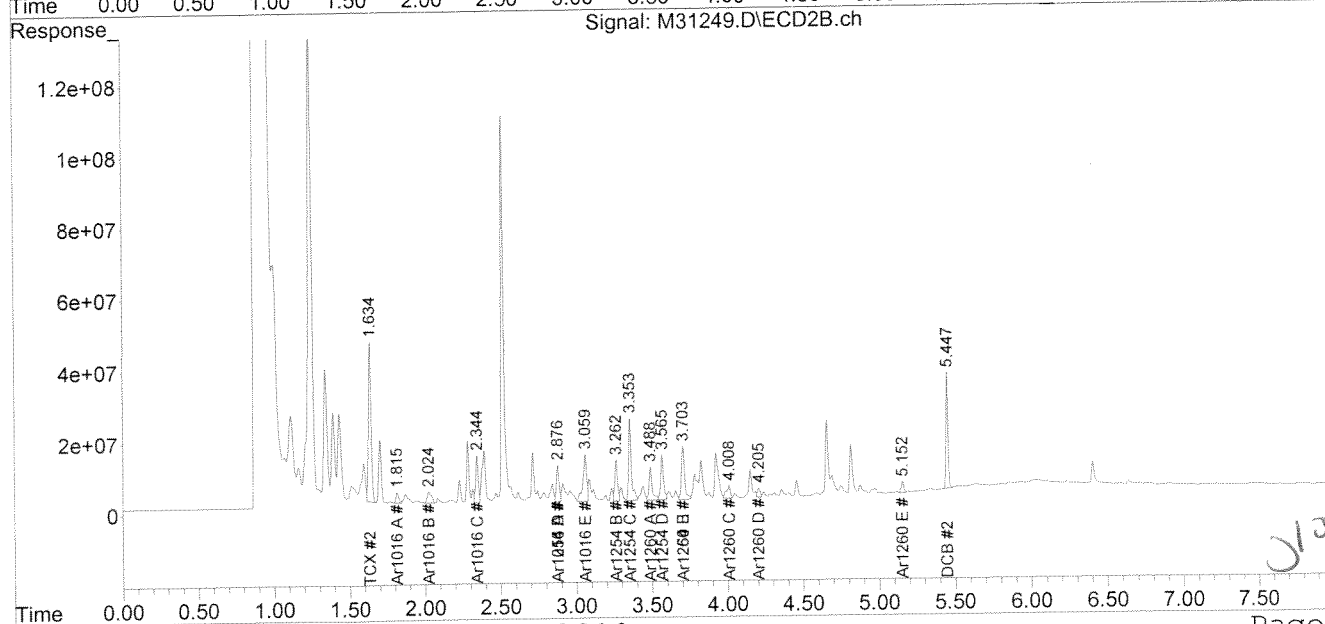
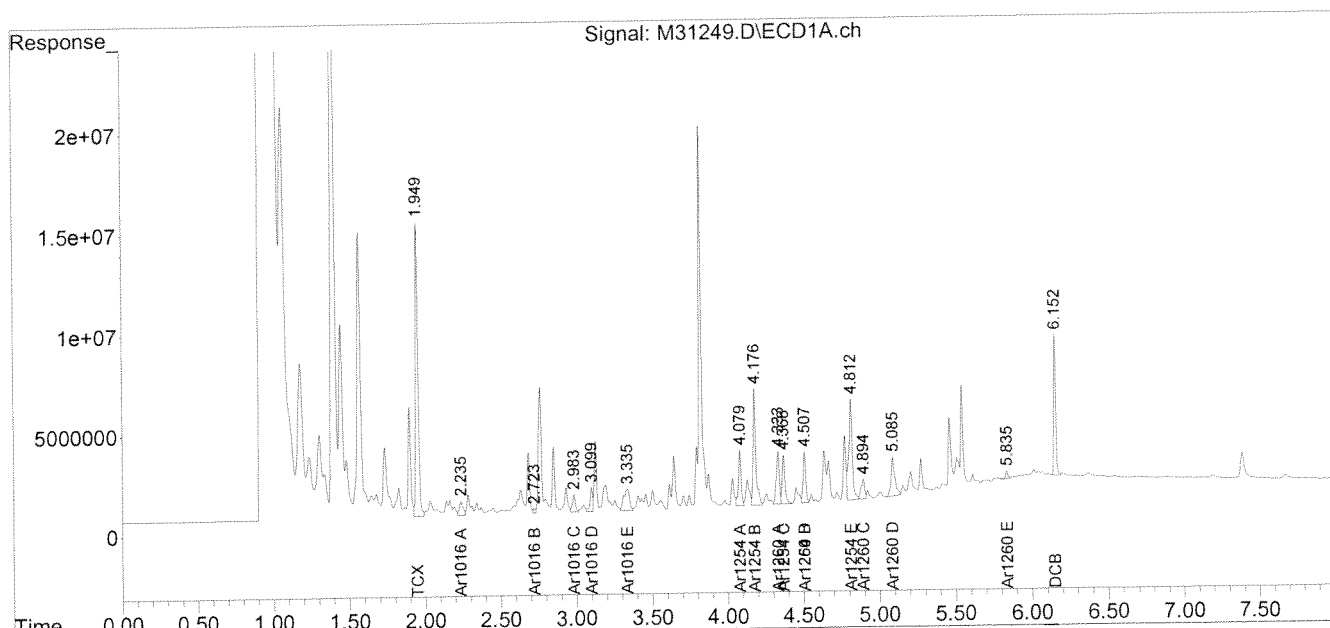
Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
 Data File : M31249.D  
 Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
 Acq On : 4 Oct 2010 9:48 pm  
 Operator : JK  
 Sample : 67904-30,,A/C  
 Misc : SOIL  
 ALS Vial : 46 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Oct 05 10:09:51 2010  
 Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
 Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
 QLast Update : Tue Sep 28 09:49:19 2010  
 Response via : Initial Calibration  
 Integrator: ChemStation

Volume Inj. : 2 uL  
 Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
 Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

*Handwritten:* 10.05.6



*Handwritten:* 10.05.6



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CWKD-24517-0838

**Lab Sample ID:** 67904-31  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	<b>2.4</b>
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	101 %	
Decachlorobiphenyl	66 %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M  
GC Column #1: STX-CLPesticides I  
Column ID: 0.25 mm  
GC Column #2: STX-CLPesticides II  
Column ID: 0.25 mm

SDG: 67904  
Sample: 67904-31,,A/C  
Data File: M31221.D  
Dilution Factor: 1.0

COMPOUND	Column #1	Column #2	RPD		#
	SAMPLE RESULT (ug/wipe)	SAMPLE RESULT (ug/wipe)			
PCB 1254	2.4	1.6	39.2		

# Column to be used to flag RPD values greater than QC limit of 40%

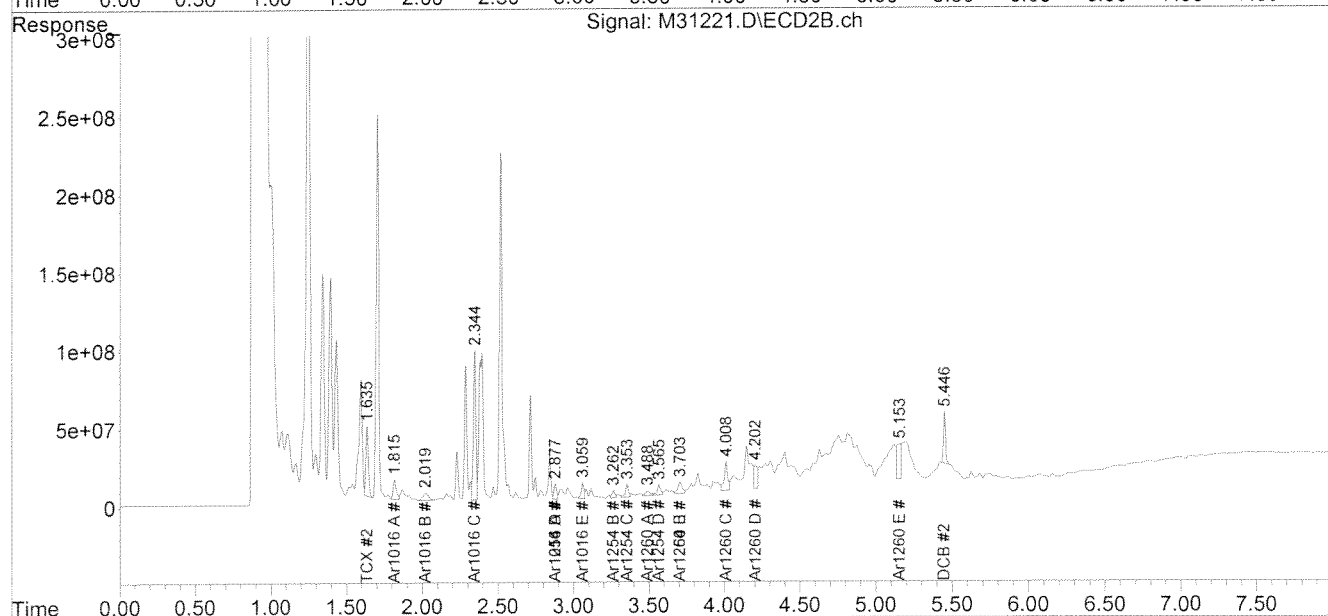
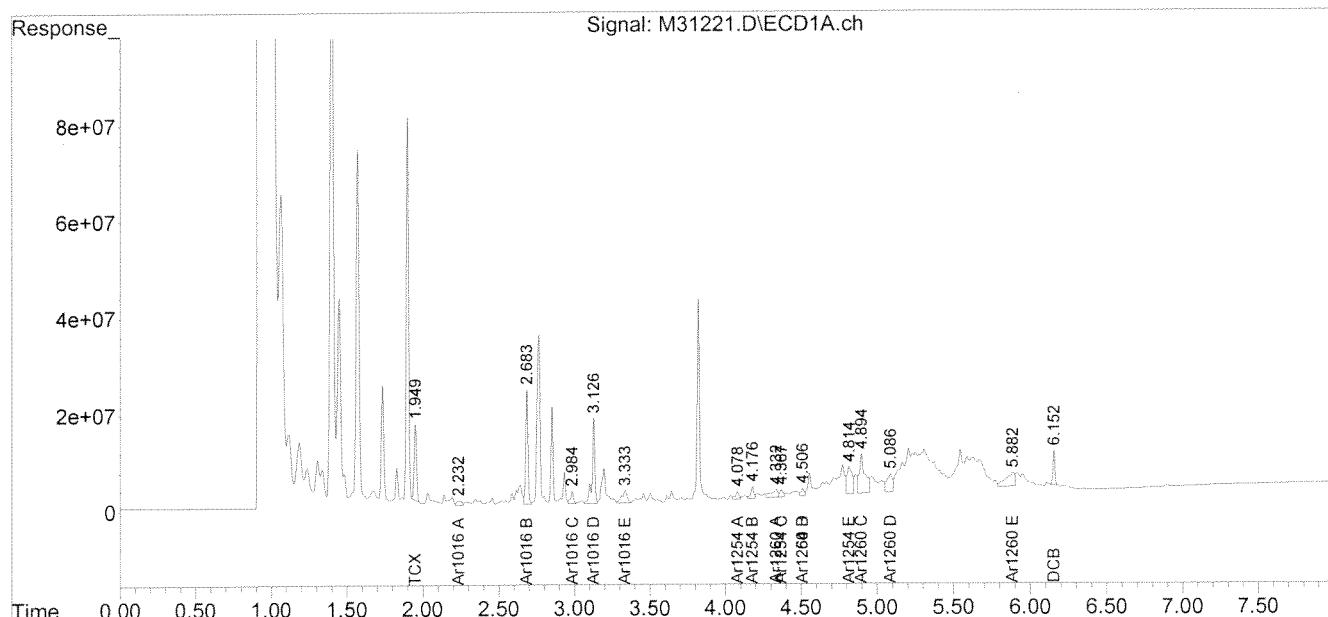
\* Values outside QC limits

Comments: \_\_\_\_\_

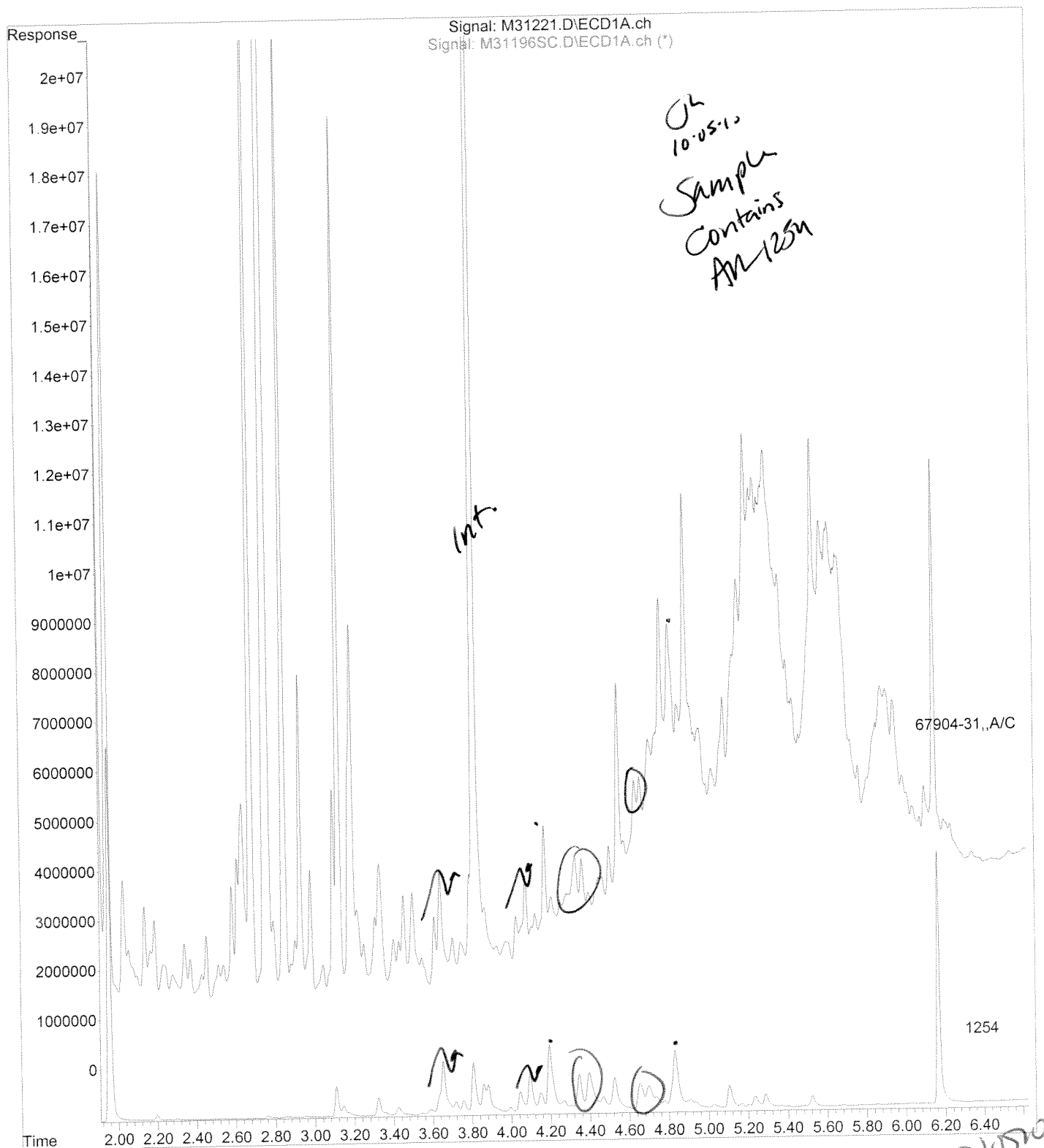
Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31221.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 5:01 pm  
Operator : JK  
Sample : 67904-31,,A/C  
Misc : SOIL  
ALS Vial : 24 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 08:54:26 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



File :C:\msdchem\1\DATA\100410-M\M31221.D  
Operator : JK  
Acquired : 4 Oct 2010 5:01 pm using AcqMethod PEST.M  
Instrument : Instrument M  
Sample Name: 67904-31,,A/C  
Misc Info : SOIL  
Vial Number: 24



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CWW-24517-0841

**Lab Sample ID:** 67904-32  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	93	%
Decachlorobiphenyl	70	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

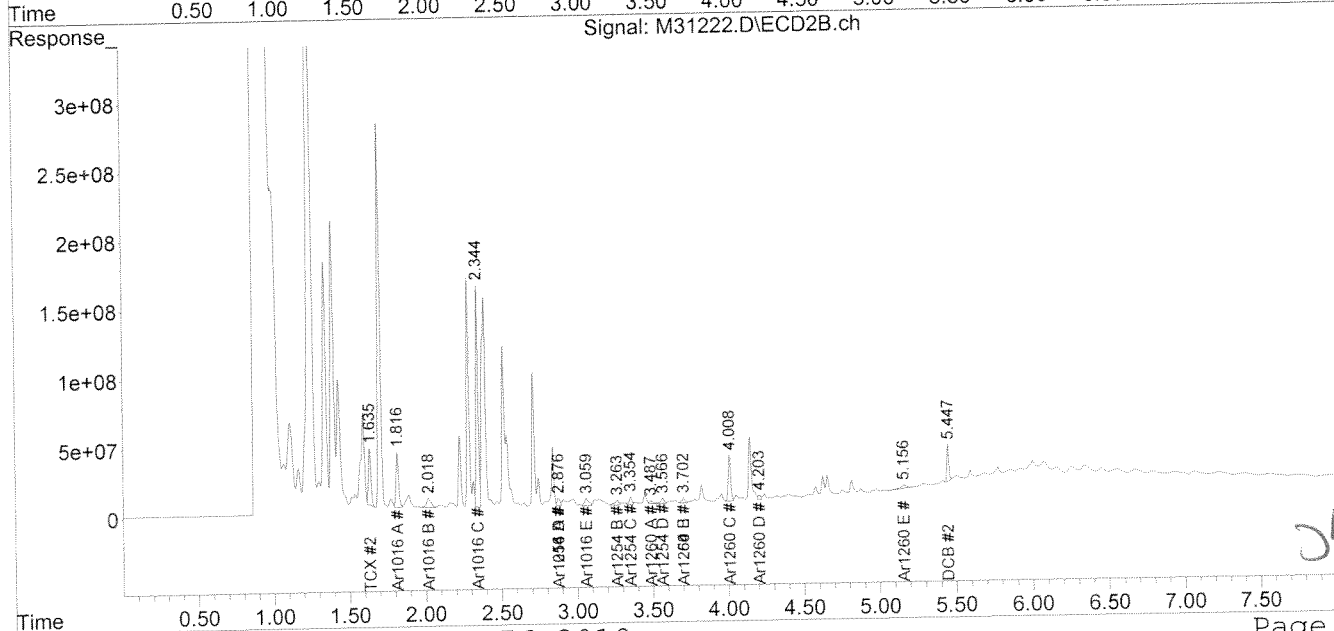
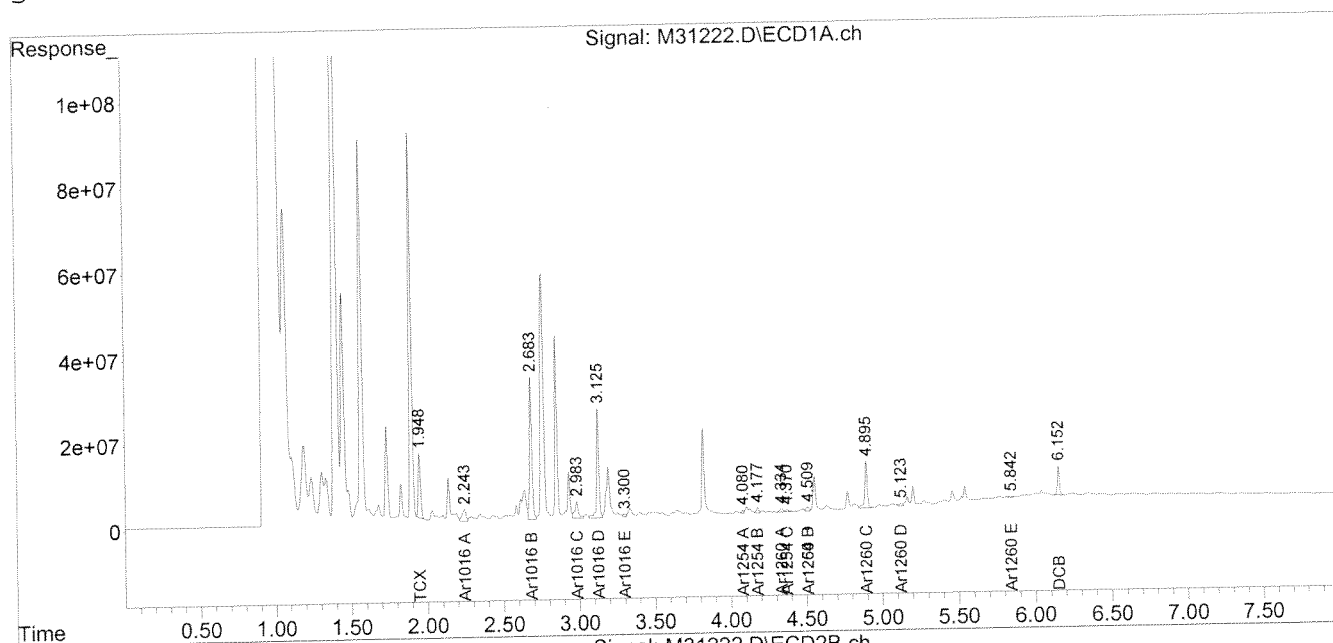
COMMENTS:

Data Path : C:\msdchem\1\DATA\100410-M\  
 Data File : M31222.D  
 Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
 Acq On : 4 Oct 2010 5:11 pm  
 Operator : JK  
 Sample : 67904-32,,A/C  
 Misc : SOIL  
 ALS Vial : 25 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Oct 05 08:55:46 2010  
 Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
 Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
 QLast Update : Tue Sep 28 09:49:19 2010  
 Response via : Initial Calibration  
 Integrator: ChemStation

Volume Inj. : 2 uL  
 Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
 Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

10-05-10



2010

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CWM-24517-0842

**Lab Sample ID:** 67904-33  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	88	%
Decachlorobiphenyl	62	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

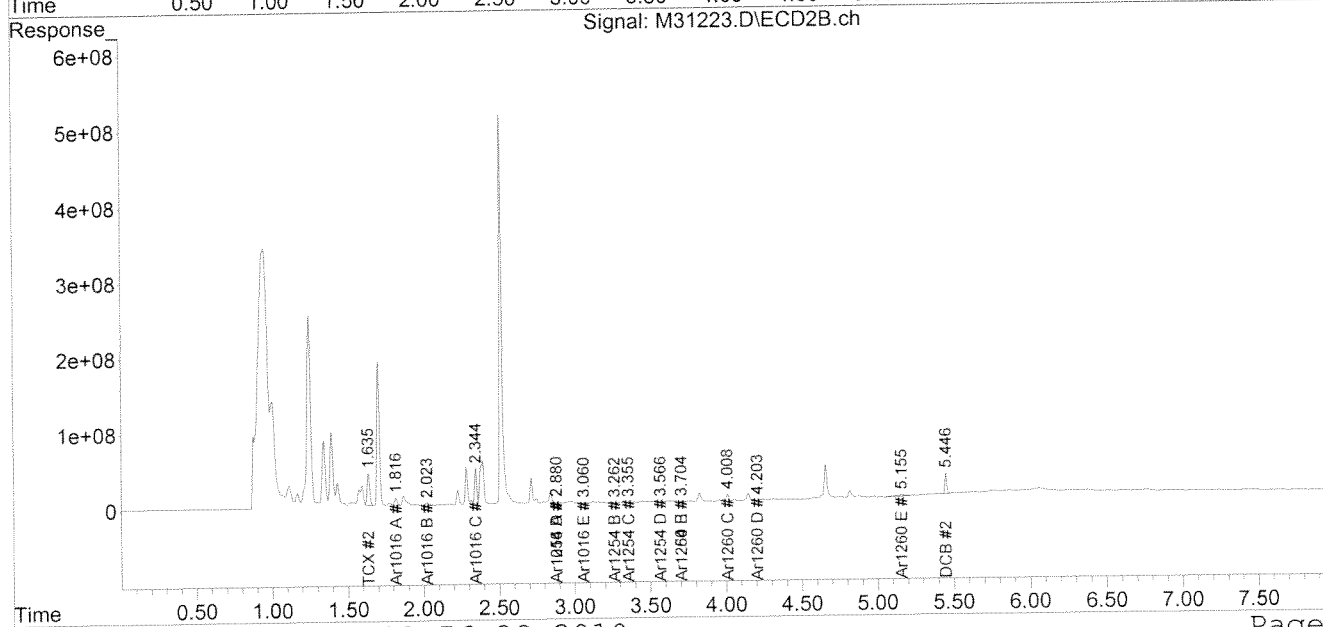
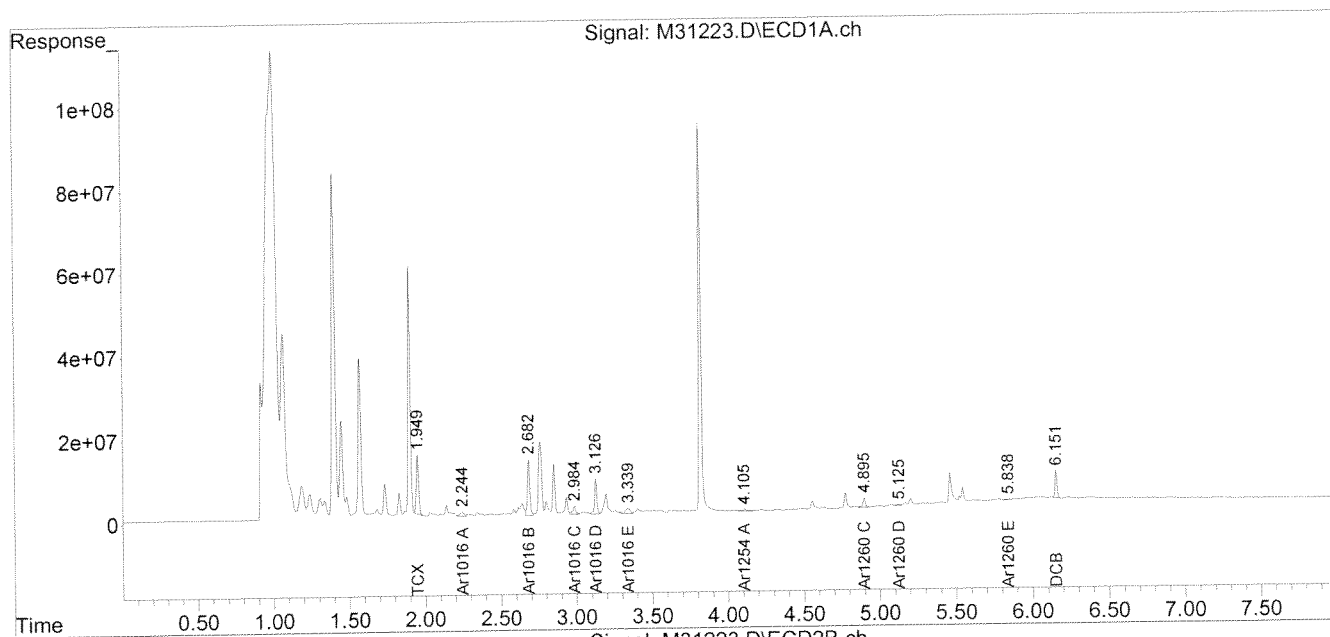
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31223.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 5:21 pm  
Operator : JK  
Sample : 67904-33,,A/C  
Misc : SOIL  
ALS Vial : 26 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 08:56:19 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CWT-24517-0840

**Lab Sample ID:** 67904-34  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/}$ wipe	Results $\mu\text{g/wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	100	%
Decachlorobiphenyl	64	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

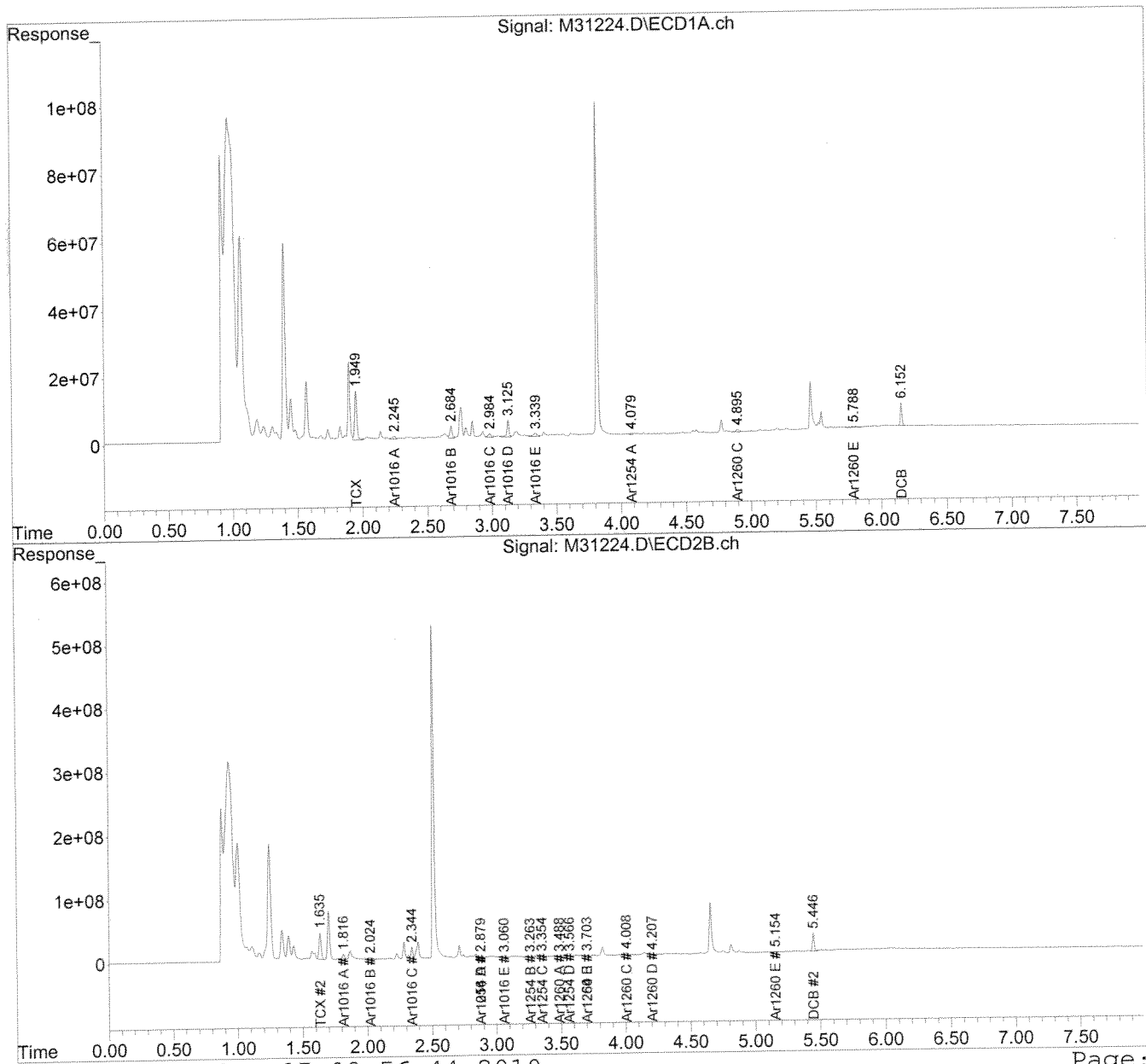
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31224.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 5:31 pm  
Operator : JK  
Sample : 67904-34,,A/C  
Misc : SOIL  
ALS Vial : 27 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 08:30:21 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CBCQ-24517-0843

**Lab Sample ID:** 67904-35  
**Matrix:** Aqueous  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 10/01/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/L}$	Results $\mu\text{g/L}$
PCB-1016	0.2	U
PCB-1221	0.2	U
PCB-1232	0.2	U
PCB-1242	0.2	U
PCB-1248	0.2	U
PCB-1254	0.2	U
PCB-1260	0.2	U
PCB-1262	0.2	U
PCB-1268	0.2	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	104	%
Decachlorobiphenyl	74	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

COMMENTS:

PCB EXT Report

Authorized signature

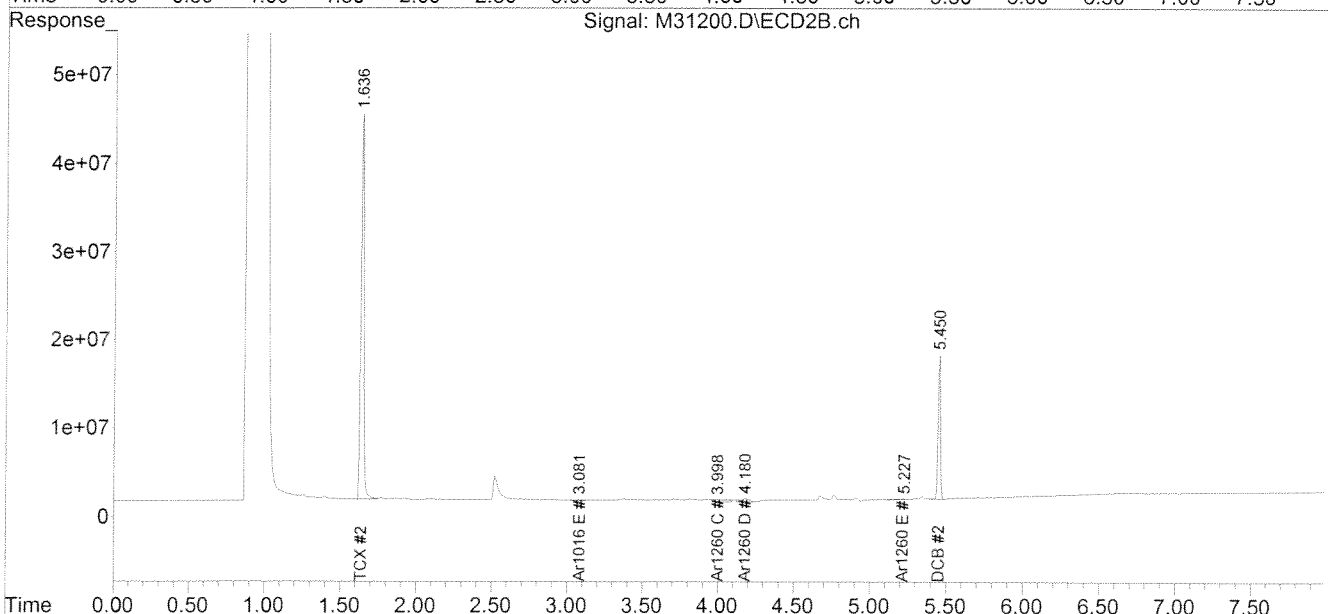
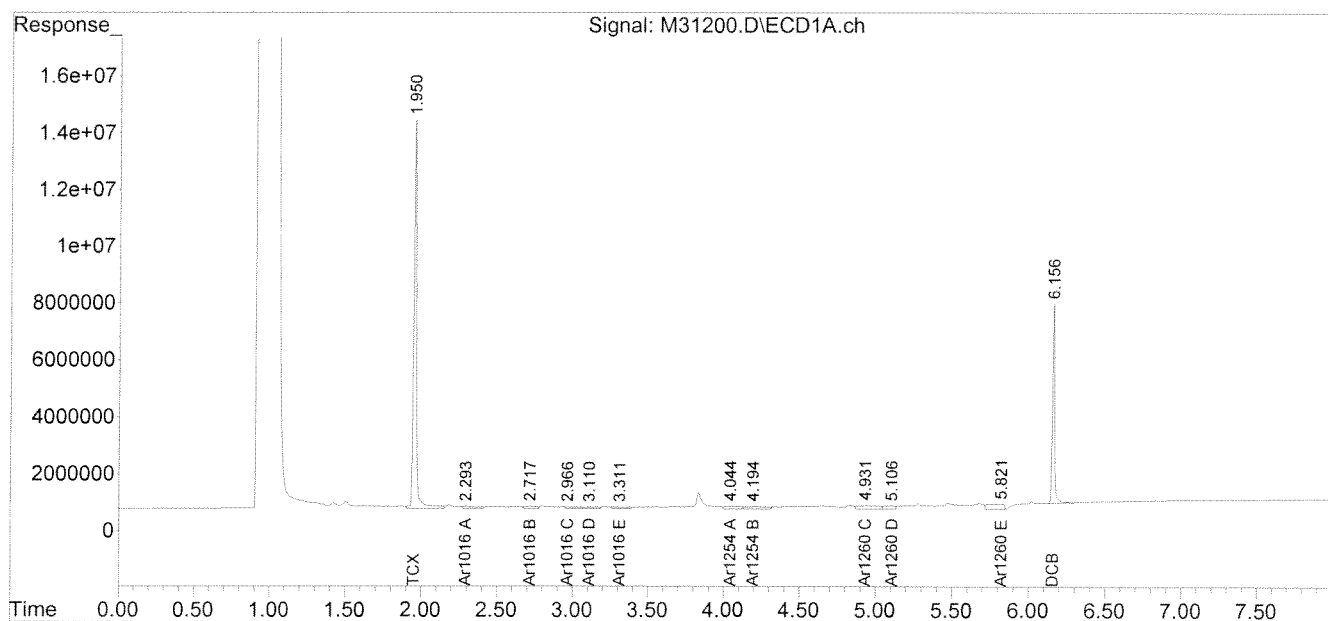


Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31200.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 1:18 pm  
Operator : JK  
Sample : 67904-35  
Misc :  
ALS Vial : 9 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 11:27:01 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

JK  
10-05-10



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CWKQ-24517-0844

**Lab Sample ID:** 67904-36  
**Matrix:** Wipe  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:** 09/28/10  
**Lab Receipt Date:** 09/29/10  
**Extraction Date:** 09/29/10  
**Analysis Date:** 10/04/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g}/$ wipe	Results $\mu\text{g}/\text{wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
PCB-1262	0.5	U
PCB-1268	0.5	U
<b>Surrogate Standard Recovery</b>		
2,4,5,6-Tetrachloro-m-xylene	97	%
Decachlorobiphenyl	68	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

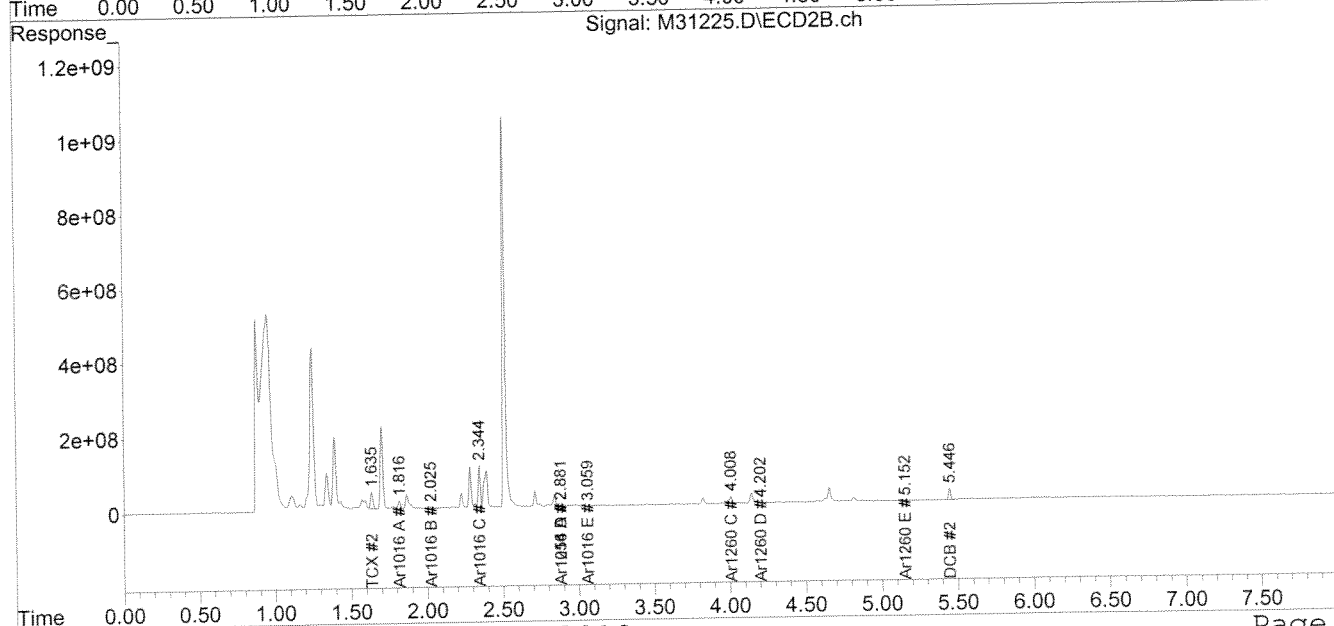
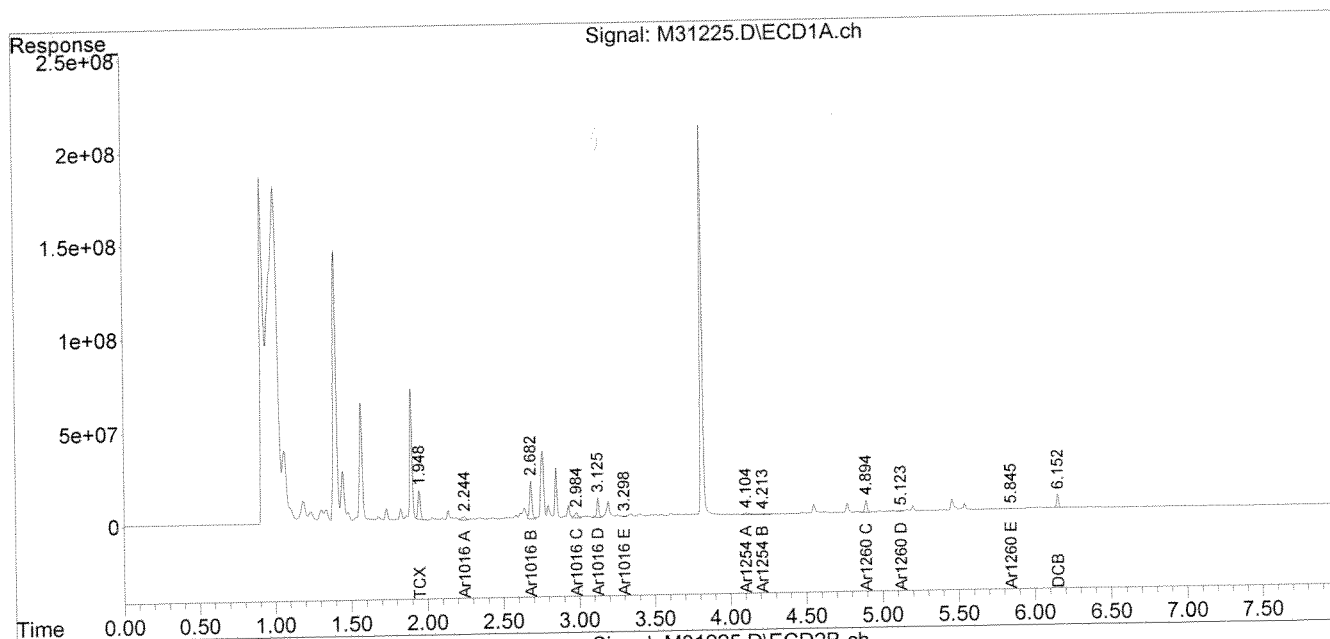
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

Data Path : C:\msdchem\1\DATA\100410-M\  
 Data File : M31225.D  
 Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
 Acq On : 4 Oct 2010 5:42 pm  
 Operator : JK  
 Sample : 67904-36,,A/C  
 Misc : SOIL  
 ALS Vial : 28 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Oct 05 08:56:52 2010  
 Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
 Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
 QLast Update : Tue Sep 28 09:49:19 2010  
 Response via : Initial Calibration  
 Integrator: ChemStation

Volume Inj. : 2 uL  
 Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
 Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



## PCB QC FORMS

# PCB AQUEOUS SYSTEM MONITORING COMPOUNDS SUMMARY

Instrument ID: M  
GC Column #1: STX-CLPesticides I  
Column ID: 0.25 mm  
GC Column #2: STX-CLPesticides II  
Column ID: 0.25 mm

SDG: 67904

[illegible]

	Lower	Upper
	Limit	Limit
SMC #1 = TCX	46	122
SMC #2 = DCB	40	135

# Column to be used to flag recovery values outside of QC limits  
\* Values outside QC limits  
D System Monitoring Compound diluted out



# PCB SOIL SYSTEM MONITORING COMPOUNDS SUMMARY

Instrument ID: M  
GC Column #1: STX-CLPesticides I  
Column ID: 0.25 mm  
GC Column #2: STX-CLPesticides II  
Column ID: 0.25 mm

SDG: 67904

[illegible]

	Lower Limit	Upper Limit
SMC #1 = TCX	40	130
SMC #2 = DCB	40	130

# Column to be used to flag recovery values outside of QC limits  
\* Values outside QC limits  
D System Monitoring Compound diluted out

# PCB SOIL SYSTEM MONITORING COMPOUNDS SUMMARY

Instrument ID: M  
GC Column #1: STX-CLPesticides I  
Column ID: 0.25 mm  
GC Column #2: STX-CLPesticides II  
Column ID: 0.25 mm

SDG: 67904

[illegible]

	Lower Limit	Upper Limit
SMC #1 = TCX	40	130
SMC #2 = DCB	40	130

# Column to be used to flag recovery values outside of QC limits

\* Values outside QC limits

D System Monitoring Compound diluted out



PCB AQUEOUS  
LABORATORY CONTROL SAMPLE/DUPLICATE  
PERCENT RECOVERY

Instrument ID: M

SDG: 67904

GC Column #1: STX-CLPesticides I

Non-spiked sample: B100110PW

Column ID: 0.25 mm

Spike: L100110PWB

GC Column #2: STX-CLPesticides II

Spike duplicate: LD100110PWB

Column ID: 0.25 mm

COMPOUND	LCS SPIKE	LCSD SPIKE	LOWER	UPPER	RPD	NON-SPIKE	SPIKE	SPIKE	#	SPIKE DUP	SPIKE DUP	#	RPD	#
	ADDED (ug/L)	ADDED (ug/L)	LIMIT	LIMIT	LIMIT	RESULT (ug/L)	RESULT (ug/L)	% REC		RESULT (ug/L)	% REC			
PCB 1016	2.0	2.0	65	140	30	0	2.0	98		2.1	103		5.0	
PCB 1260	2.0	2.0	60	130	30	0	1.7	86		1.7	85		1.5	
PCB 1016 #2	2.0	2.0	65	140	30	0	1.8	92		1.8	91		1.1	
PCB 1260 #2	2.0	2.0	60	130	30	0	1.8	88		1.8	89		1.3	

# Column to be used to flag recovery and RPD values outside of QC limits

\* Values outside QC limits

LCS/LCSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: \_\_\_\_\_  
\_\_\_\_\_

PCB SOIL  
LABORATORY CONTROL SAMPLE/DUPLICATE  
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG: 67904

Non-spiked sample: B092910PSOX,,A/C

Spike: L092910PSOX,,A/C

Spike duplicate: LD092910PSOX,,A/C

	LCS SPIKE	LCSD SPIKE	LOWER	UPPER	RPD	NON-SPIKE	SPIKE	SPIKE		SPIKE DUP	SPIKE DUP		
COMPOUND	ADDED (ug/kg)	ADDED (ug/kg)	LIMIT	LIMIT	LIMIT	RESULT (ug/kg)	RESULT (ug/kg)	% REC	#	RESULT (ug/kg)	% REC	#	RPD
PCB 1016	200	200	65	140	30	0	200	100		200	100		0.1
PCB 1260	200	200	60	130	30	0	181	91		188	94		3.6
PCB 1016 #2	200	200	65	140	30	0	254	127		214	107		16.8
PCB 1260 #2	200	200	60	130	30	0	174	87		171	85		2.0

# Column to be used to flag recovery and RPD values outside of QC limits

\* Values outside QC limits

LCS/LCSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: \_\_\_\_\_  
\_\_\_\_\_

PCB SOIL  
LABORATORY CONTROL SAMPLE/DUPLICATE  
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG: 67904

Non-spiked sample: B092910PSOX2,,A/C

Spike: L092910PSOX2,,A/C

Spike duplicate: LD092910PSOX2,,A/C

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
PCB 1016	200	200	65	140	30	0	226	113		214	107		5.5	
PCB 1260	200	200	60	130	30	0	228	114		208	104		9.3	
PCB 1016 #2	200	200	65	140	30	0	267	133		242	121		9.6	
PCB 1260 #2	200	200	60	130	30	0	199	100		174	87		13.7	

# Column to be used to flag recovery and RPD values outside of QC limits

\* Values outside QC limits

LCS/LCSD spike added values have been weight adjusted.

Non-spiked result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: \_\_\_\_\_  
\_\_\_\_\_

## CHAIN OF CUSTODIES





<b>environmental laboratory LLC</b>		195 Commerce Way Suite E Portsmouth, NH 03801 Phone (603) 436-5111 Fax (603) 430-2151	
Project#: <b>210980</b> Company: <b>Woodard &amp; Curran</b> Contact: <b>Amy Wallace</b> Address: <b>35 New England Business Center Suite 180</b> <b>Andover, MA 01810</b>	Proj. Name: <b>Peabody Ter (a)</b> PO#: <b>210980</b> Quote #: <b>210980</b>	Matrix Key: C = Concrete WP = Waste SW = Surface Water GW = Groundwater DW = Drinking Water S = Soil/Sludge E = Extract X = Other	
Samples were: 1) Shipped or hand-delivered <b>40</b> 2) Temp blank °C <b>NA</b> 3) Received in good condition <b>NA</b> 4) pH checked by: <b>NA</b> 5) Labels checked by: <b>CP 9/27/10</b>		For Analytics Use Only Rev. 5/06/18/08	

Station Identification	Sample Date	Sample Time	Analysis	Preservation	Matrix	Container number/type	pH	Analytics Sample #
PTE-CBK-2538-0818	9/28	10:51	PCB	Unpres	caulk			67904-12
PTE-CBK-2538-0819		10:54		X	caulk			-13
PTE-CBK-2538-0820		10:58		X	caulk			-14
PTE-CWK-2532-0821		11:06		X	WP			-15
PTE-CWK-2538-0822		11:10		X	WP			-16
PTE-CBK-2538-0823		11:13		X	caulk			-17
PTE-CWT-2532-0824		11:20		X	WP			-18
PTE-CWN-2538-0825		11:22		X	WP			-19
PTE-CWN-2538-0826		11:30		X	WP			-20
PTF-CWK-24517-0828		13:05		X	WP			-21
PTF-CWK-24517-0829		13:10		X	WP			-22

Email Results to: <b>awallace@woodardcurran.com</b> <b>jhamel@woodardcurran.com</b>		Comments / Instructions: <b>Soxhlet/8082</b>	
Turnaround Time (TAT) <input type="checkbox"/> 24hr* <input type="checkbox"/> 48hr* <input checked="" type="checkbox"/> 5 Days* <input type="checkbox"/> 10 Days*		Project Requirements: *Fee may apply Report Type: <input checked="" type="checkbox"/> MCP* <input checked="" type="checkbox"/> Level II* <input type="checkbox"/> Level III* <input type="checkbox"/> Level IV* <input type="checkbox"/> Standard <input type="checkbox"/> CTCP* <input type="checkbox"/> DOD*	
State Standard: (eg. S-1 or GW-1) EDD Required: <input checked="" type="checkbox"/> N Type: <b>GIS Key</b>		Relinquished By Sampler: <b>Amy Wallace</b> Date: <b>9/28/10</b> Time: <b>17:00</b>	
Relinquished By: <b>Amy Wallace</b> Date: <b>9/29/10</b> Time: <b>11:50</b>		Relinquished By: <b>Amy Wallace</b> Date: <b>9/29/10</b> Time: <b>11:50</b>	

# Chain Of Custody Form

<b>analitytics environmental laboratory LLC</b> 195 Commerce Way Suite E Portsmouth, NH 03801 Phone (603) 436-5111 Fax (603) 430-2151		For Analytics Use Only Rev. 5/06/18/08 Samples were: 1) Shipped or hand-delivered <u>4°C</u> 2) Temp blank °C <u>4°C</u> 3) Received in good condition <u>Y</u> or N 4) pH checked by: <u>N/A</u> 5) Labels checked by: <u>R 9/29/10</u>	
Project#: <u>210980</u> Proj. Name: <u>Reabody Terrace</u> Company: <u>Woodard &amp; Curran</u> Contact: <u>Amy Wallace</u> Address: <u>35 New England Business Center Suite 180</u> <u>Andover, MA 01810</u> Phone: <u>(978)557-8150</u> PO# <u>        </u> Quote # <u>        </u> Sampler (Signature): <u>Amy Wallace</u>		Matrix Key: C = Concrete WP = Wipe WW = Wastewater SW = Surface Water GW = Groundwater DW = Drinking Water S = Soil/Sludge O = Oil E = Extract X = Other	
Station Identification PTF-CBK-24517-0830 PTF-CBK-24517-0831 PTF-CBK-24517-0832 PTF-CBK-24517-0833 PTF-CBK-24517-0834 PTF-CBK-24517-0835 PTF-CBK-24517-0836 PTF-CBK-24517-0837 PTF-CWKD-24517-0838 PTF-CWW-24517-0841 PTF-CWM-24517-0842		Sample Date 9/28 9/28 9/28 9/28 9/28 9/28 9/28 9/28 9/28 9/28 9/28	
Sample Time 13:12 13:15 13:15 13:20 13:25 13:10 13:11 13:30 13:05 13:35 13:40		Analysis PCB ↓	
Preservation Unpres <input checked="" type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> HCl <input type="checkbox"/> Methanol <input type="checkbox"/>		Container Key P=plastic G=glass Matrix Caulk <input type="checkbox"/> Caulk <input type="checkbox"/> Caulk <input type="checkbox"/> Caulk <input type="checkbox"/> Caulk <input type="checkbox"/> C <input type="checkbox"/> C <input type="checkbox"/> C <input type="checkbox"/> WP <input type="checkbox"/> WP <input type="checkbox"/> WP <input type="checkbox"/>	
Container number/type 1 G 1 G 1 G 1 G 1 G 1 G 1 G 1 G 1 G 1 G 1 G		pH 6.904-23 -24 -25 -26 -27 -28 -29 -30 -31 -32 -33	
Relinquished By Sampler: <u>Amy Wallace</u> Date: <u>9/28/10</u> Time: <u>1700</u> Received By: <u>        </u> Date: <u>        </u> Time: <u>        </u>		Relinquished By: <u>        </u> Date: <u>        </u> Time: <u>        </u> Received By: <u>        </u> Date: <u>        </u> Time: <u>        </u>	

Email Results to:  
awallace@woodardcurran.com  
jhamel@woodardcurran.com

Comments / Instructions:  
Soxhlet/8082

Turnaround Time (TAT)  
☐ 24hr\* ☐ 48hr\* ☒ 5 Days\* ☐ 10 Days  
 \*Fee may apply; lab approval required

Project Requirements:  
 \*Fee may apply  
 Report Type: ☒ MCP\* ☒ Level II\* ☐ Level III\* ☐ Level IV\* ☐ Standard  
 State: ☒ NH ☐ MA ☐ ME ☐ CT ☐ RI  
 State Standard:           
 (eg. S-1 or GW-1)  
 EDD Required: ☒ N  
 Type: CIS key

# Chain Of Custody Form

<b>environmental laboratory LLC</b> 195 Commerce Way Suite E Portsmouth, NH 03801 Phone (603) 436-5111 Fax (603) 430-2151		For Analytics Use Only Rev. 5/06/18/08 Samples were: 1) Shipped of hand-delivered <u>40</u> 2) Temp blank °C <u>40</u> 3) Received in good condition <u>Y</u> or <u>N</u> 4) pH checked by: <u>9/29/10</u> 5) Labels checked by: <u>9/29/10</u>	
Project#: <u>210980</u> Company: <u>Woodard &amp; Curran</u> Contact: <u>Amy Wallace</u> Address: <u>35 New England Business Center Suite 180</u> <u>Andover, MA 01810</u> Phone: <u>(978) 557-8150</u> PO# <u>Quote #</u> Sampler (Signature): <u>Amy Wallace</u>	Matrix Key: C = Concrete WP = Waste Water SW = Surface Water GW = Groundwater DW = Drinking Water S = Soil/Sludge O = Oil E = Extract X = Other	Preservation Unpres <input type="checkbox"/> 4°C <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> HCl <input type="checkbox"/> Methanol <input type="checkbox"/> Hexane <input type="checkbox"/>	Container Key P=plastic G=glass Container number/type Matrix pH Analytics Sample #
Station Identification <u>PTF-CWT-24517-0840</u> <u>PTF-CRGA-24517-0843</u> <u>PTF-CWKA-24517-0844</u>	Sample Date <u>9/28</u> <u>9/28</u> <u>9/28</u>	Sample Time <u>13:45</u> <u>14:18</u> <u>14:28</u>	Analysis <u>PCB</u> <u>PCB</u> <u>PCB</u>
Email Results to: <u>awallace@woodardcurran.com</u> <u>jhamel@woodardcurran.com</u>		Comments / Instructions: <u>Soxhlet / 8082</u> <u>* Amberlite tested neg. for</u> <u>CI w/KI paper jwb 9/29/10</u>	
Turnaround Time (TAT) <input type="checkbox"/> 24hr* <input type="checkbox"/> 48hr* <input checked="" type="checkbox"/> 5 Days* <input type="checkbox"/> 72hr* <input type="checkbox"/> 10 Days		Project Requirements: *Fee may apply Report Type: <input checked="" type="checkbox"/> MCP* <input checked="" type="checkbox"/> Level II* <input type="checkbox"/> Level III* <input type="checkbox"/> Level IV* <input type="checkbox"/> Standard <input type="checkbox"/> CTCP* <input type="checkbox"/> DOD*	
Relinquished By: <u>Amy Wallace</u> Date: <u>9/28/10</u> Time: <u>1700</u>		Relinquished By: <u>Amy Wallace</u> Date: <u>9/29/10</u> Time: <u>1700</u>	
Relinquished By: <u>Amy Wallace</u> Date: <u>9/29/10</u> Time: <u>1700</u>		Relinquished By: <u>Amy Wallace</u> Date: <u>9/29/10</u> Time: <u>1700</u>	

ANALYTICS SAMPLE RECEIPT CHECKLIST

AEL LAB#: 67904  
 CLIENT: Woodward & Curran  
 PROJECT: Peabody Terrace

COOLER NUMBER: 79  
 NUMBER OF COOLERS: 1  
 DATE RECEIVED: 9/29/10

**A: PRELIMINARY EXAMINATION:**

DATE COOLER OPENED: 9/29/10

1. Cooler received by(initials): LT

Date Received: \_\_\_\_\_

2. Circle one:

Hand delivered  
 (If so, skip 3)

Shipped

3. Did cooler come with a shipping slip?

Y

N/A

3a. Enter carrier name and airbill number here:

NA

4. Were custody seals on the outside of cooler?

How many & where: NA

Seal Date: NA

Y  
 Seal Name: NA

5. Did the custody seals arrive unbroken and intact upon arrival?

Y

N/A

6. COC#:

NA

7. Were Custody papers filled out properly (ink, signed, etc)?

Y

N

8. Were custody papers sealed in a plastic bag?

Y

N

9. Did you sign the COC in the appropriate place?

Y

N

10. Was the project identifiable from the COC papers?

Y

N

11. Was enough ice used to chill the cooler?

Y N

Temp. of cooler:

4°C

**B. Log-In:** Date samples were logged in:

9/29/10

By: JSB

12. Type of packing in cooler(bubble wrap, popcorn)

Y

N

13. Were all bottles sealed in separate plastic bags?

Y

N

14. Did all bottles arrive unbroken and were labels in good condition?

Y

N

15. Were all bottle labels complete(ID, Date, time, etc.)

Y

N

16. Did all bottle labels agree with custody papers?

Y

N

17. Were the correct containers used for the tests indicated:

Y

N

18. Were samples received at the correct pH?

Y

N

19. Was sufficient amount of sample sent for the tests indicated?

Y

N

20. Were bubbles absent in VOA samples?

Y

N/A

If NO, List Sample ID's and Lab #s: \_\_\_\_\_

*No date or time on some of jars*

*Ag-Sample only checked*

21. Laboratory labeling verified by (initials): oe

Date: 9/29/10



195 Commerce Way Suite E  
Portsmouth, New Hampshire 03801  
603-436-5111 Fax 603-430-2151  
800-929-9906  
www.analyticslab.com

January 10, 2011

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

**RE: Analytical Results Case Narrative  
Analytics # 67904 Revision 1  
Peabody Terrace Proj.# 210980**

Dear Ms. Wallace;

Enclosed please find the analytical results for samples submitted for the above-mentioned project. The attached Cover Page lists the sample IDs, Lab tracking numbers and collection dates for the samples included in this deliverable.

Samples were analyzed for Polychlorinated Biphenyls (PCBs) by EPA Method 8082.

Revision 1: This report has been revised to correct the surrogate results for sample 67904-8 to list that there was an interference on column#2 as indicated on the form 1 results page. Please replace the pages of the original report with the pages provided here.

Unless otherwise noted in the Non-conformance Summary listed below, all of the quality control (QC) criteria including initial calibration, calibration verification, surrogate recovery, holding time and method accuracy/precision for these analyses were within acceptable limits.

This Level II data package has been assembled in the following order:

- Case Narrative/Non-Conformance Summary
- Sample Log Sheet - Cover Page
- PCB Form 1 Data Sheet for Samples and Blanks
- Chromatograms
- PCB Form 10 Confirmation Results
- PCB Form 3 MS/MSD (LCS) Recoveries
- Chain of Custody (COC) Forms

## QC NON-CONFORMANCE SUMMARY

**Sample Receipt:**

No exceptions.

**PCBs by EPA Method 8082:**

No results were reported below the quantitation limit.

Samples 67904-1 thru 67904-3, 67904-8, 67904-10 thru 67904-14, 67904-17, 67904-23 thru 67904-27 required dilution due to matrix interference or the concentrations of PCBs detected in the sample.

Sample 67904-35 had low recovery of Decachlorobiphenyl (DCB) recovery on column#2. Column#1 was in control for both surrogates. Results were reported without qualification.

The MS/MSD's extracted on samples 67904-8 and 67904-27 were not analyzed as the parents samples required dilution due to the concentrations of PCBs detected in the samples.

The closing continuing calibration standard (file#M31227SC) had low recovery for PCB 1254. The standard was reanalyzed (file# M31229SC) with all analytes in control. Results were reported without qualification.

The closing continuing calibration standard (file#M31253SC) had low recovery for PCB 1254. The standard was reanalyzed (file# M31255SC) with all analytes in control. Results were reported without qualification.

If you have any questions on these results, please do not hesitate to contact me.

Sincerely,

ANALYTICS Environmental Laboratory, LLC



Stephen L. Knollmeyer  
Laboratory Director



October 7, 2010

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

**RE:        Analytical Results Case Narrative**  
             **Analytics # 67921**  
             **Peabody Terrace Proj.# 210980**

Dear Ms. Wallace;

Enclosed please find the analytical results for samples submitted for the above-mentioned project. The attached Cover Page lists the sample IDs, Lab tracking numbers and collection dates for the samples included in this deliverable.

Samples were analyzed for Polychlorinated Biphenyls (PCBs) by EPA Method 8082.

Unless otherwise noted in the Non-conformance Summary listed below, all of the quality control (QC) criteria including initial calibration, calibration verification, surrogate recovery, holding time and method accuracy/precision for these analyses were within acceptable limits.

This Level II data package has been assembled in the following order:

- Case Narrative/Non-Conformance Summary
- Sample Log Sheet - Cover Page
- PCB Form 1 Data Sheet for Samples and Blanks
- Chromatograms
- PCB Form 10 Confirmation Results
- PCB Form 3 MS/MSD (LCS) Recoveries
- Chain of Custody (COC) Forms



## QC NON-CONFORMANCE SUMMARY

**Sample Receipt:**

No exceptions.

**PCBs by EPA Method 8082:**

No results were reported below the quantitation limit.

Sample 67921-1 required dilution due to the concentrations of PCBs detected in the sample.

The closing continuing calibration standard (file#M31271SC) had low recovery for PCB 1254. The standard was reanalyzed (file# M31273SC) with all analytes in control. Results were reported without qualification.

If you have any questions on these results, please do not hesitate to contact me.

Sincerely,

ANALYTICS Environmental Laboratory, LLC

A handwritten signature in black ink, appearing to read "M. Knollmeyer" or similar, with a stylized flourish at the end.

Stephen L. Knollmeyer  
Laboratory Director

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

**Report Number: 67921**

**Revision: Rev. 0**

**Re: Peabody Terrace (Project No: 210980)**


Enclosed are the results of the analyses on your sample(s). Samples were received on 30 September 2010 and analyzed for the tests listed. Samples were received in acceptable condition, with the exceptions noted below or on the chain of custody. These results pertain to samples as received by the laboratory and for the analytical tests requested on the chain of custody. The results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. Please see individual reports for specific methodologies and references.

<u>Lab Number</u>	<u>Sample Date</u>	<u>Station Location</u>	<u>Analysis</u>	<u>Comments</u>
67921-1	09/29/10	PTE-CBK-N-0847	EPA 8082 (PCBs only)	
67921-2	09/29/10	PTE-CBC-E-0848	EPA 8082 (PCBs only)	
67921-3	09/29/10	PTE-CBC-E-0849	EPA 8082 (PCBs only)	
67921-4	09/29/10	PTY-CBC-N-0850	EPA 8082 (PCBs only)	
67921-5	09/29/10	PTY-CBC-N-0851	Electronic Data Deliverable	
	09/29/10	PTY-CBC-N-0851	EPA 8082 (PCBs only)	

**Sample Receipt Exceptions: None**

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, Virginia, Maryland, and is accredited by the Department of Defense (DOD) ELAP program. A list of actual certified parameters is available upon request.

If you have any questions on these results, please do not hesitate to contact us.

Authorized signature   
Stephen L. Knollmeyer Lab. Director  
Date 10/07/2010

**This report shall not be reproduced, except in full, without the written consent of Analytics Environmental Laboratory, LLC.**

## MassDEP Analytical Protocol Certification Form

Laboratory Name: Analytics Environmental Laboratory, LLC

Project #: 67921

Project Location: Peabody Terrace

RTN:

**This Form provides certifications for the following data set. Laboratory Sample ID Number(s):**

67921-1, 67921-2, 67921-3, 67921-4, 67921-5

Matrices: ☐ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☒ Other

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input type="checkbox"/>	7470/7471 Hg CAM III B <input type="checkbox"/>	MassDEP VPH CAM IV A <input type="checkbox"/>	8081 Pesticides CAM V B <input type="checkbox"/>	7196 Hex Cr CAM VI B <input type="checkbox"/>	MassDEP APH CAM IX A <input type="checkbox"/>
8270 SVOC CAM II B <input type="checkbox"/>	7010 Metals CAM III C <input type="checkbox"/>	MassDEP EPH CAM IV B <input type="checkbox"/>	8151 Herbicides CAM V C <input type="checkbox"/>	8330 Explosives CAM VIII A <input type="checkbox"/>	TO-15 VOC CAM IX B <input type="checkbox"/>
6010 Metals CAM III A <input type="checkbox"/>	6020 Metals CAM III D <input type="checkbox"/>	8082 PCB CAM V A <input checked="" type="checkbox"/>	9014 Total Cyanide/PAC CAM VI A <input type="checkbox"/>	6860 Perchlorate CAM VIII B <input type="checkbox"/>	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>D</b>	Does the laboratory report comply with all reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>E</b>	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <sup>1</sup>
----------	-----------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------

**Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.**

<b>H</b>	Were ALL QC performance standards specified in the CAM protocol(s) achieved?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>

<sup>1</sup> All negative responses must be addressed in an attached laboratory narrative.

**I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.**

Signature: Melissa Gulli Position: Assistant Laboratory Director

Printed Name: Melissa Gulli

Date: October 07, 2010

### Surrogate Compound Limits

Matrix:	Aqueous	Solid	
Units:	% Recovery	% Recovery	Method
Volatile Organic Compounds - Drinking Water			
1,4-Difluorobenzene	70-130		EPA 524.2
Bromofluorobenzene	70-130		
1,2-Dichlorobenzene-d4	70-130		
Volatile Organic Compounds			
1,2-Dichloroethane-d4	70-120	70-120	EPA 624/8260B
Toluene-d8	85-120	85-120	
Bromofluorobenzene	75-120	75-120	
Semi-Volatile Organic Compounds			
2-Fluorophenol	20-110	35-105	EPA 625/8270C
d5-Phenol	15-110	40-100	
d5-nitrobenzene	40-110	35-100	
2-Fluorobiphenyl	50-110	45-105	
2,4,6-Tribromophenol	40-110	40-125	
d14-p-terphenyl	50-130	30-125	
PAH's by SIM			
d5-nitrobenzene	21-110	35-110	EPA 8270C
2-Fluorobiphenyl	36-121	45-105	
d14-p-terphenyl	33-141	30-125	
Pesticides and PCBs			
2,4,5,6-Tetrachloro-m-xylene (TCX)	46-122	40-130	EPA 608/8082
Decachlorobiphenyl (DCB)	40-135	40-130	
Herbicides			
Dichloroacetic acid (DCAA)	30-150	30-150	
Gasoline Range Organics/TPH Gasoline			
Trifluorotoluene TFT (FID)	60-140	60-140	MEDEP 4217/EPA 8015
Bromofluorobenzene (BFB) (FID)	60-140	60-140	
Trifluorotoluene TFT (PID)	60-140	60-140	
Bromofluorobenzene (BFB) (PID)	60-140	60-140	
Diesel Range Organics/TPH Diesel			
m-terphenyl	60-140	60-140	MEDEP 4125/EPA 8015/CT ETPH
Volatile Petroleum Hydrocarbons			
2,5-Dibromotoluene (PID)	70-130	70-130	MADEP VPH May 2004 Rev1.1
2,5-Dibromotoluene (FID)	70-130	70-130	
Extracatable Petroleum Hydrocarbons			
1-chloro-octadecane (aliphatic)	40-140	40-140	MADEP EPH May 2004 Rev1.1
o-Terphenyl (aromatic)	40-140	40-140	
2-Fluorobiphenyl (Fractionation)	40-140	40-140	
2-Bromonaphthalene (fractionation)	40-140	40-140	

## PCB DATA SUMMARIES

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** Lab QC

**Lab Sample ID:** B093010PSOX  
**Matrix:** Soil  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:**  
**Lab Receipt Date:**  
**Extraction Date:** 09/30/10  
**Analysis Date:** 10/04/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	97	%
Decachlorobiphenyl	75	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

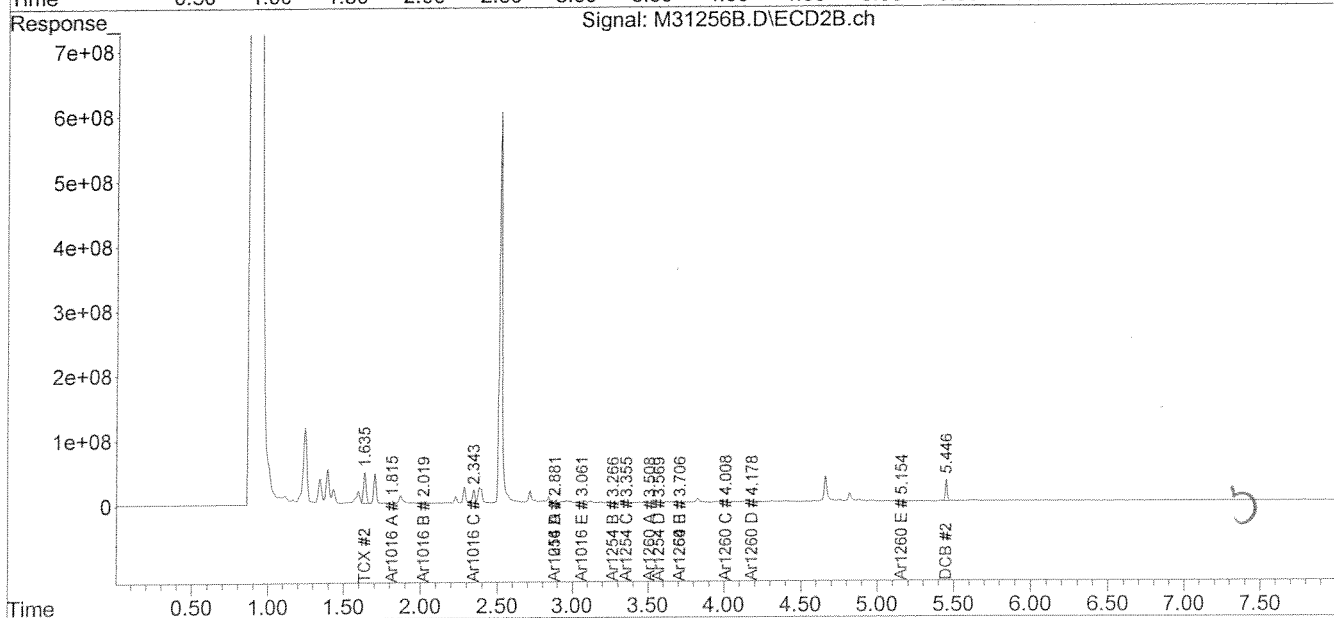
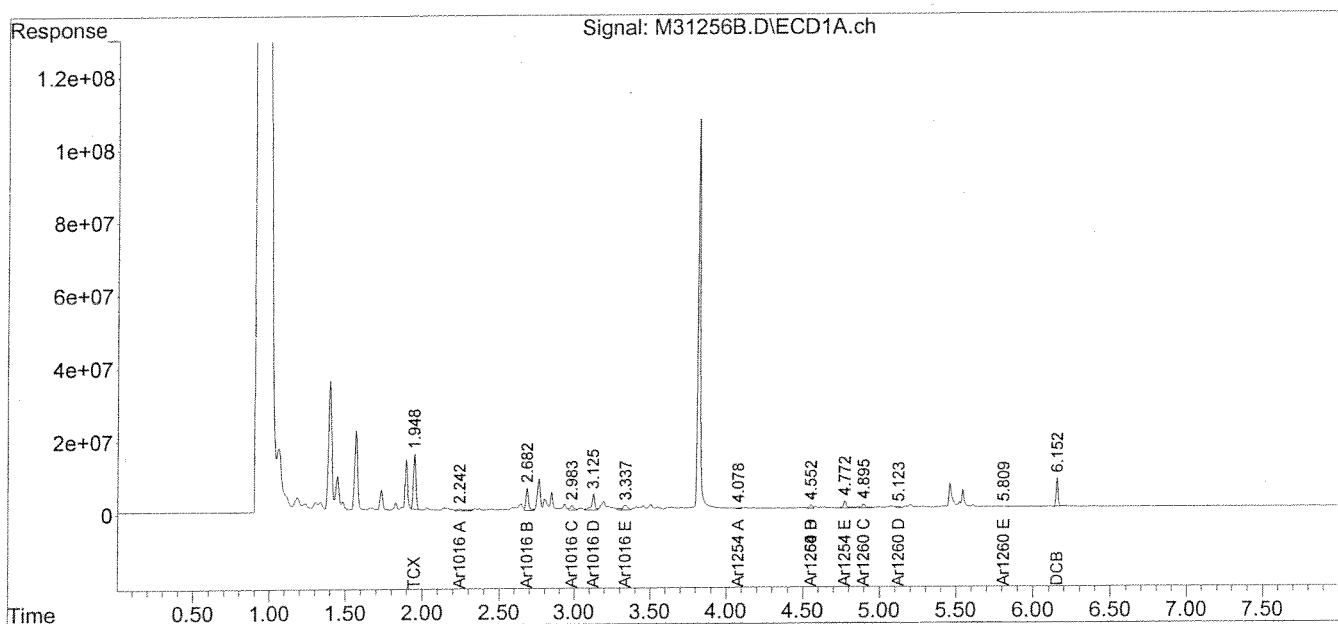
COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31256B.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 4 Oct 2010 11:00 pm  
Operator : JK  
Sample : B093010PSOX,,A/C  
Misc : SOIL  
ALS Vial : 49 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 10:33:13 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um

JK  
10-05-1



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**  
**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** Lab QC

**Lab Sample ID:** B093010PSOX RR  
**Matrix:** Soil  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:**  
**Lab Receipt Date:**  
**Extraction Date:** 09/30/10  
**Analysis Date:** 10/05/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b>Surrogate Standard Recovery</b>		
2,4,5,6-Tetrachloro-m-xylene	107 %	
Decachlorobiphenyl	75 %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

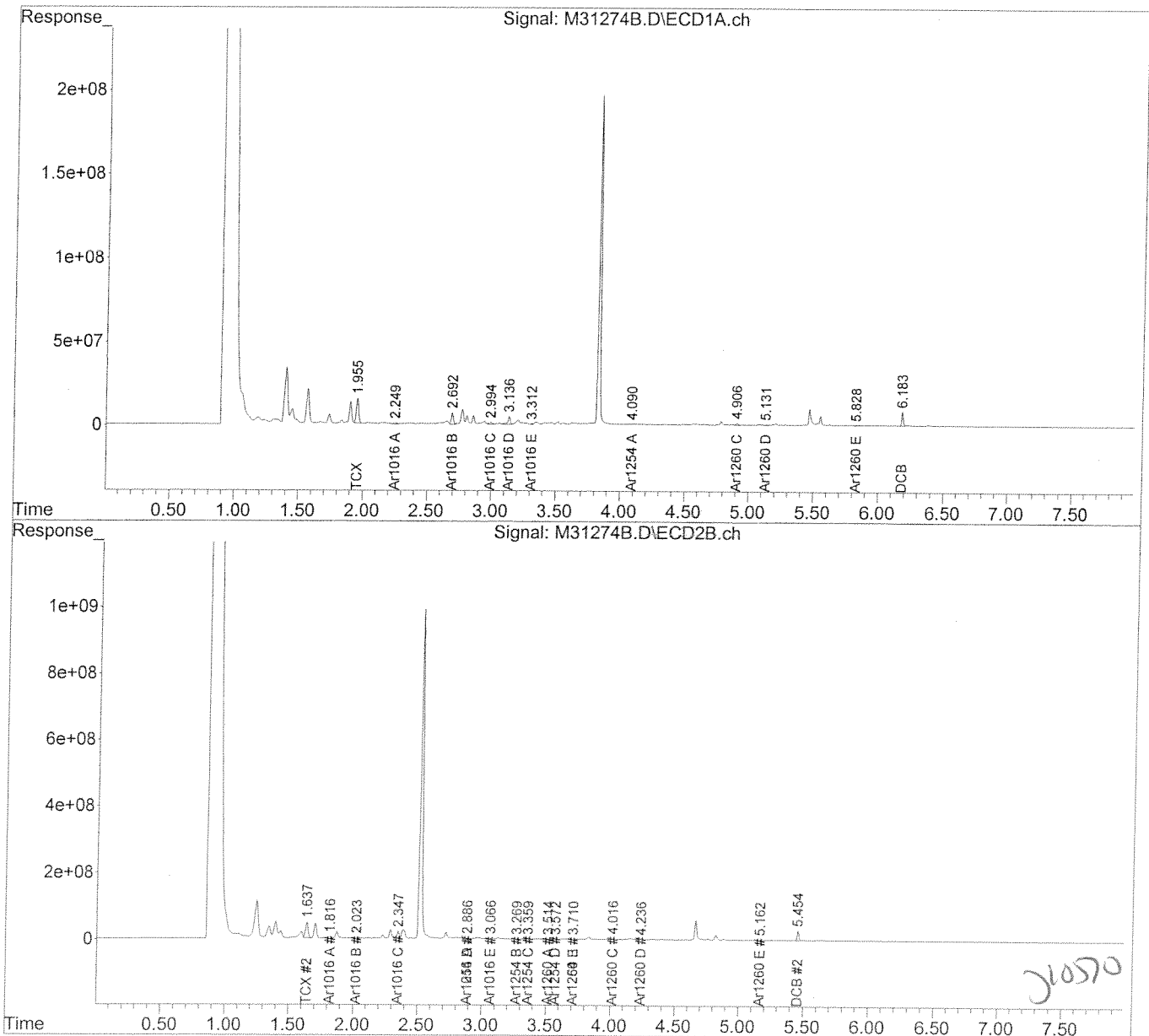
COMMENTS: Results are expressed on a dry weight basis.



Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31274B.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 5 Oct 2010 10:26 am  
Operator : JK  
Sample : B093010PSOX,RR,,A/C  
Misc : SOIL  
ALS Vial : 49 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 14:45:55 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:18 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

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**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CBK-N-0847

**Lab Sample ID:** 67921-1  
**Matrix:** Solid  
**Percent Solid:** 98  
**Dilution Factor:** 51300  
**Collection Date:** 09/29/10  
**Lab Receipt Date:** 09/30/10  
**Extraction Date:** 09/30/10  
**Analysis Date:** 10/05/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	1693000	U
PCB-1221	1693000	U
PCB-1232	1693000	U
PCB-1242	1693000	U
PCB-1248	1693000	U
PCB-1254	1693000	<b>18100000</b>
PCB-1260	1693000	U
PCB-1262	1693000	U
PCB-1268	1693000	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 67921
GC Column #1: STX-CLPesticides I	Sample: 67921-1,1:5000,,A/C
Column ID: 0.25 mm	Data File: M31277.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 51336.7
Column ID: 0.25 mm	

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	18135297	16221701	11.1	

# Column to be used to flag RPD values greater than QC limit of 40%

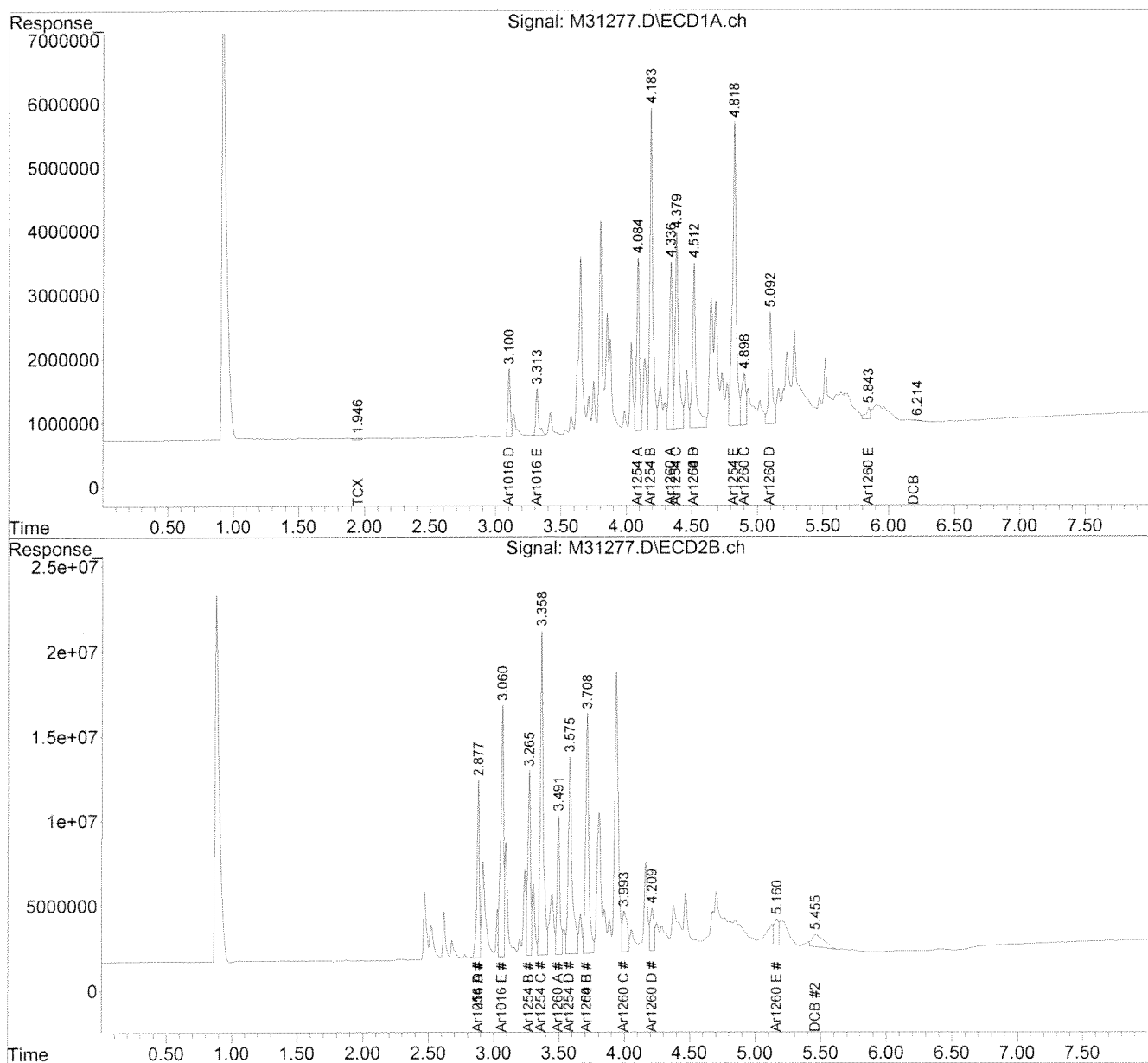
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31277.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 5 Oct 2010 10:57 am  
Operator : JK  
Sample : 67921-1,1:5000,,A/C  
Misc : SOIL  
ALS Vial : 93 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 14:45:01 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

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**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CBC-E-0848

**Lab Sample ID:** 67921-2  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 1.0  
**Collection Date:** 09/29/10  
**Lab Receipt Date:** 09/30/10  
**Extraction Date:** 09/30/10  
**Analysis Date:** 10/05/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	<b>163</b>
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b>Surrogate Standard Recovery</b>		
2,4,5,6-Tetrachloro-m-xylene	99	%
Decachlorobiphenyl	74	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M  
GC Column #1: STX-CLPesticides I  
Column ID: 0.25 mm  
GC Column #2: STX-CLPesticides II  
Column ID: 0.25 mm

SDG: 67921  
Sample: 67921-2,,A/C  
Data File: M31266.D  
Dilution Factor: 1.0

COMPOUND	Column #1	Column #2	RPD		#
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	163	162	0.8		

# Column to be used to flag RPD values greater than QC limit of 40%

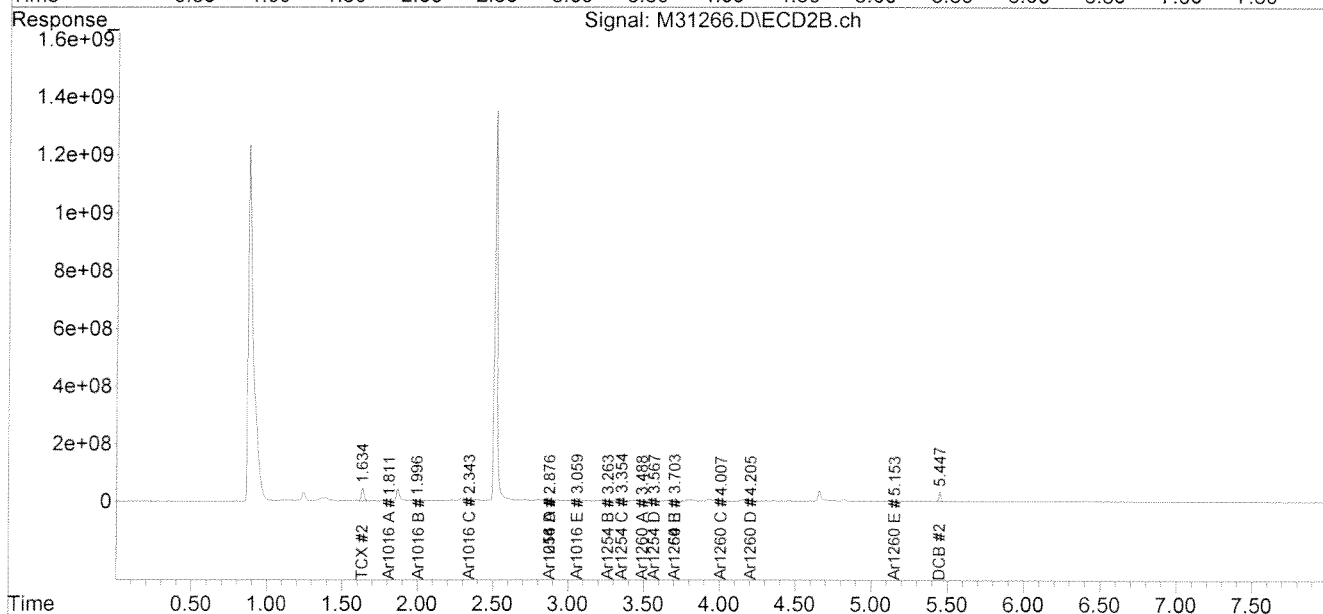
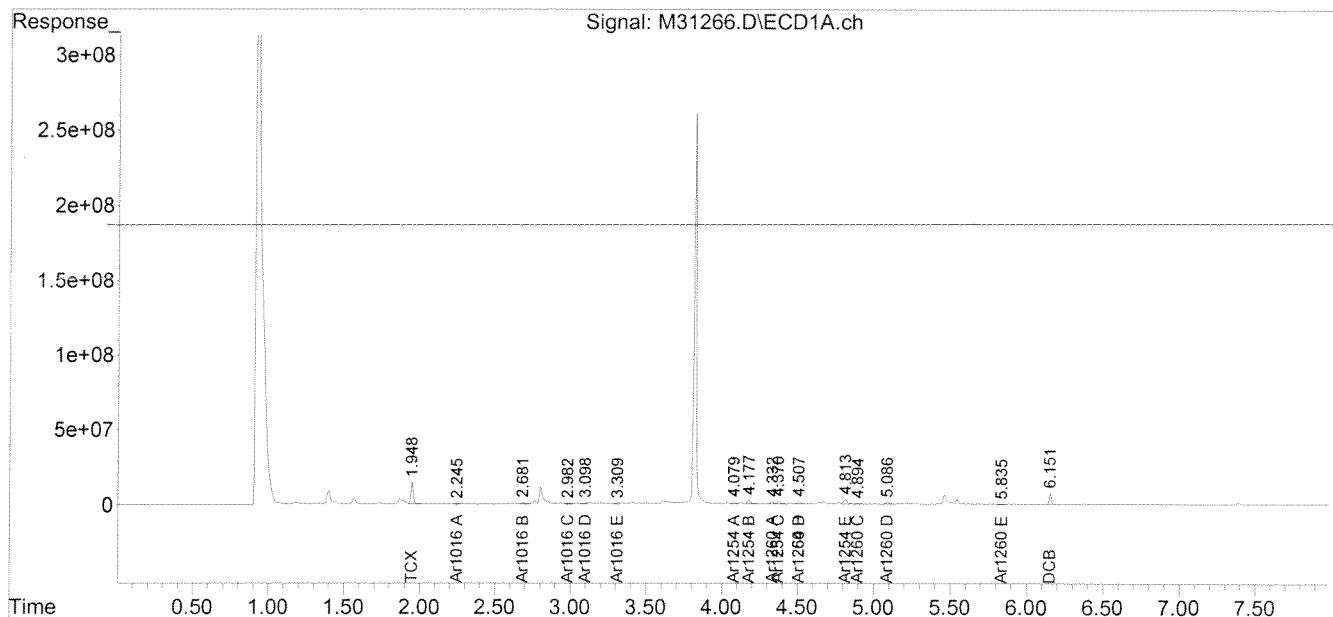
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31266.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 5 Oct 2010 12:42 am  
Operator : JK  
Sample : 67921-2,,A/C  
Misc : SOIL  
ALS Vial : 59 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 10:50:39 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**  
**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CBC-E-0849

**Lab Sample ID:** 67921-3  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 1.0  
**Collection Date:** 09/29/10  
**Lab Receipt Date:** 09/30/10  
**Extraction Date:** 09/30/10  
**Analysis Date:** 10/05/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	<b>107</b>
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	100 %	
Decachlorobiphenyl	75 %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.



PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 67921
GC Column #1: STX-CLPesticides I	Sample: 67921-3,,A/C
Column ID: 0.25 mm	Data File: M31267.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 1.0
Column ID: 0.25 mm	

Column #1		Column #2		RPD	#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	88	107		19.5	

# Column to be used to flag RPD values greater than QC limit of 40%

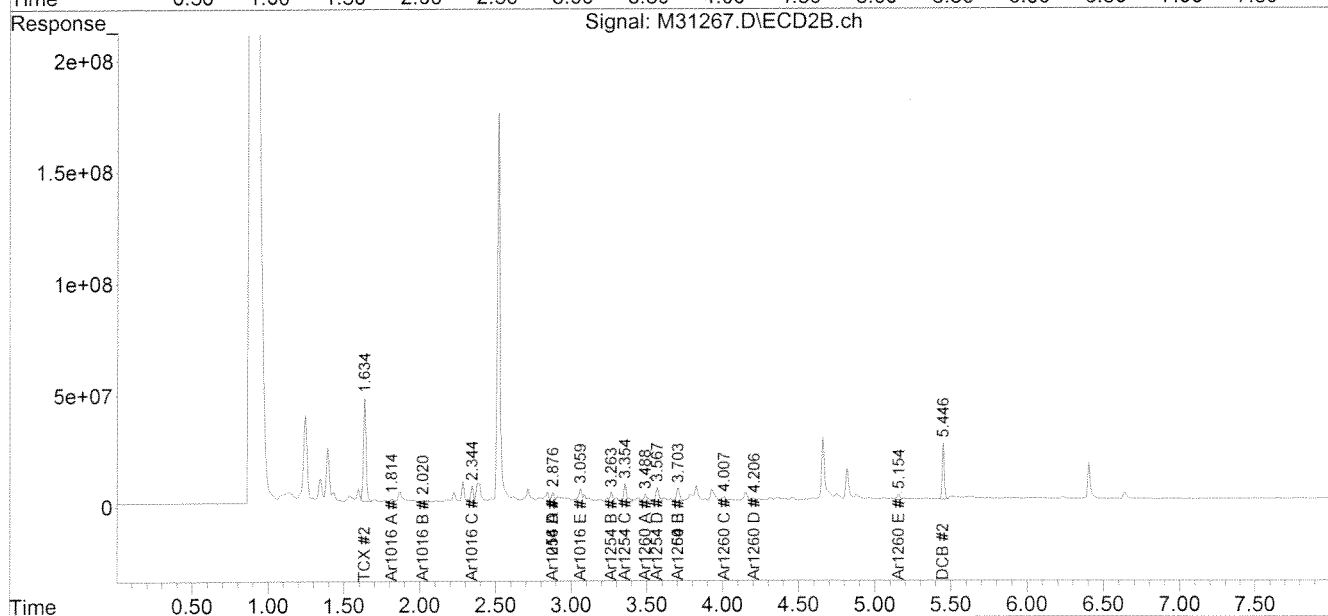
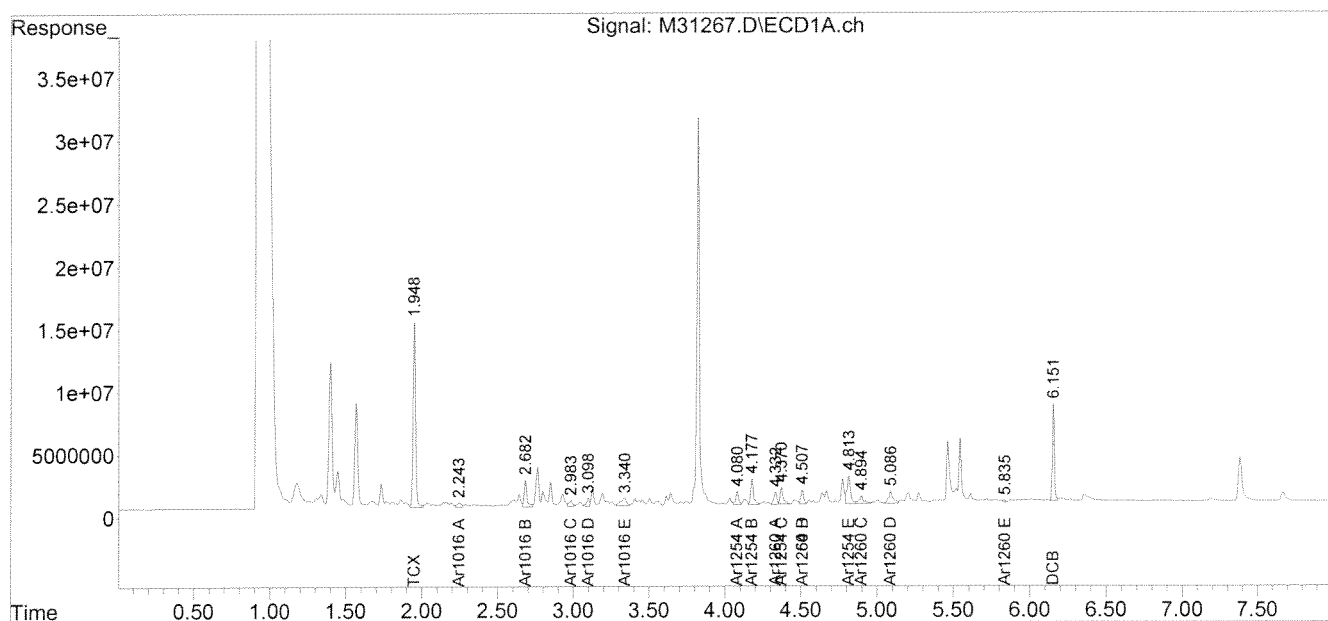
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31267.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 5 Oct 2010 12:53 am  
Operator : JK  
Sample : 67921-3,,A/C  
Misc : SOIL  
ALS Vial : 60 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 10:50:41 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTY-CBC-N-0850

**Lab Sample ID:** 67921-4  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 1.0  
**Collection Date:** 09/29/10  
**Lab Receipt Date:** 09/30/10  
**Extraction Date:** 09/30/10  
**Analysis Date:** 10/05/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	<b>222</b>
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	100	%
Decachlorobiphenyl	70	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 67921
GC Column #1: STX-CLPesticides I	Sample: 67921-4,,A/C
Column ID: 0.25 mm	Data File: M31268.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 1.0
Column ID: 0.25 mm	

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	222	185	18.1	

# Column to be used to flag RPD values greater than QC limit of 40%

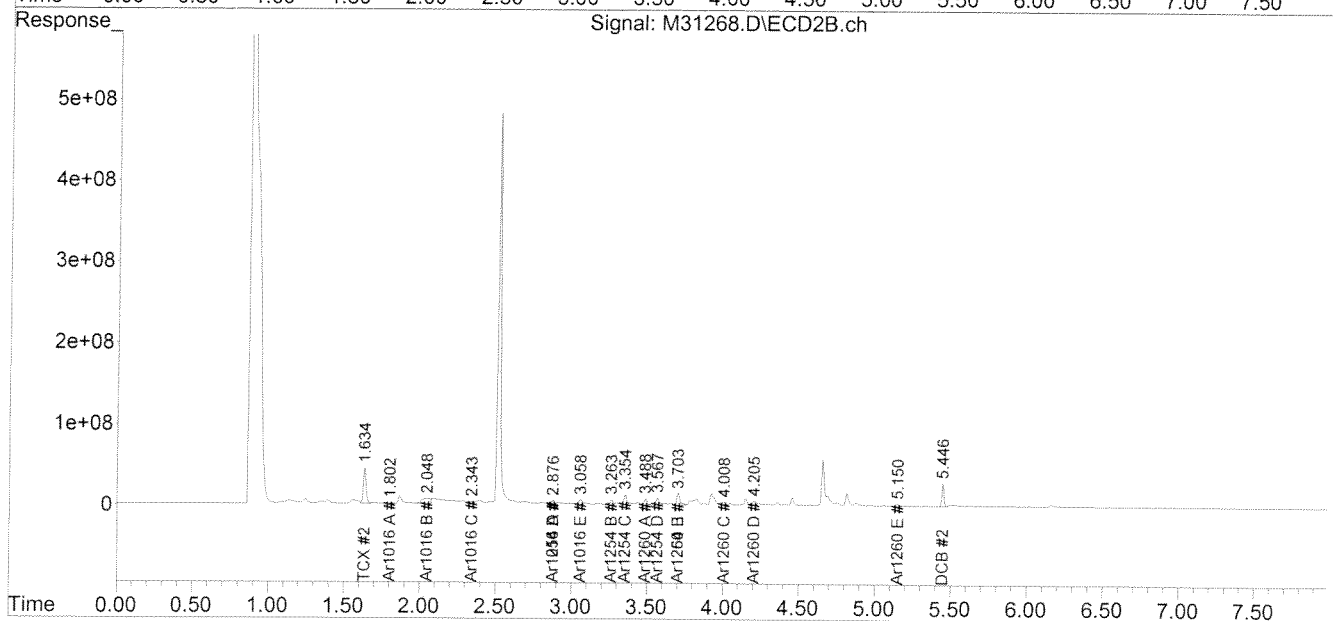
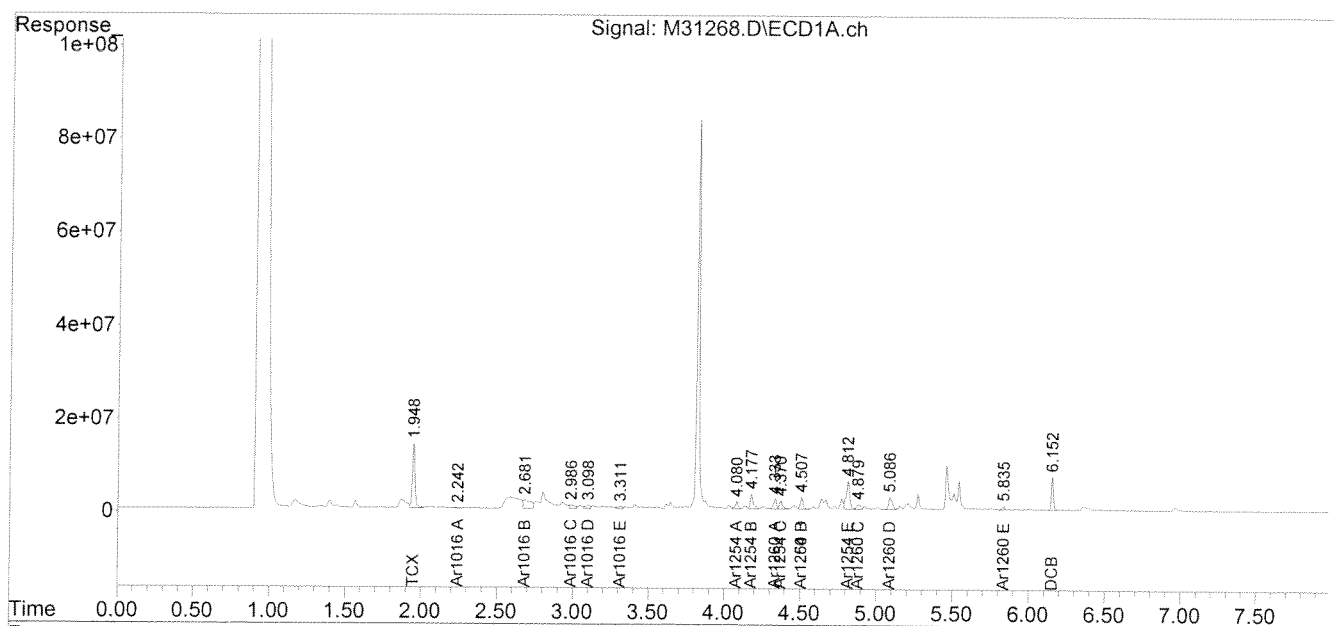
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31268.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 5 Oct 2010 1:03 am  
Operator : JK  
Sample : 67921-4,,A/C  
Misc : SOIL  
ALS Vial : 61 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 10:50:43 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

October 6, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**  
**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTY-CBC-N-0851

**Lab Sample ID:** 67921-5  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 1.0  
**Collection Date:** 09/29/10  
**Lab Receipt Date:** 09/30/10  
**Extraction Date:** 09/30/10  
**Analysis Date:** 10/05/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	<b>107</b>
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	109	%
Decachlorobiphenyl	73	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 67921
GC Column #1: STX-CLPesticides I	Sample: 67921-5,,A/C
Column ID: 0.25 mm	Data File: M31269.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 1.0
Column ID: 0.25 mm	

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	107	93	14.7	

# Column to be used to flag RPD values greater than QC limit of 40%

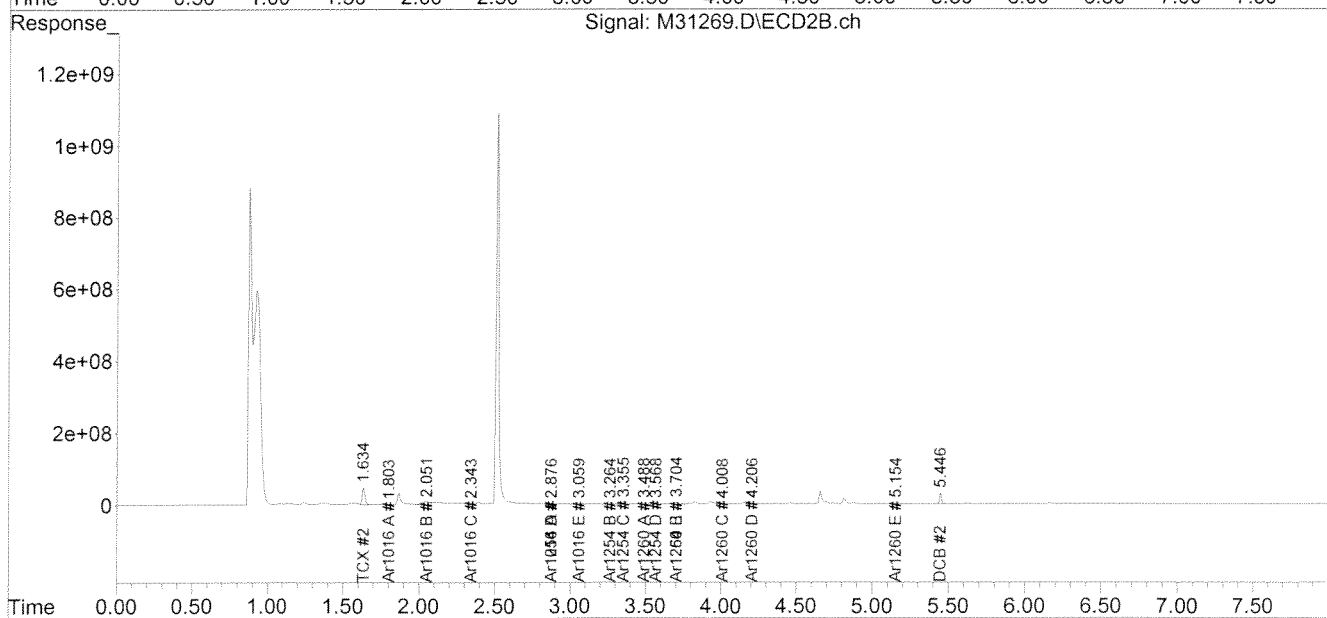
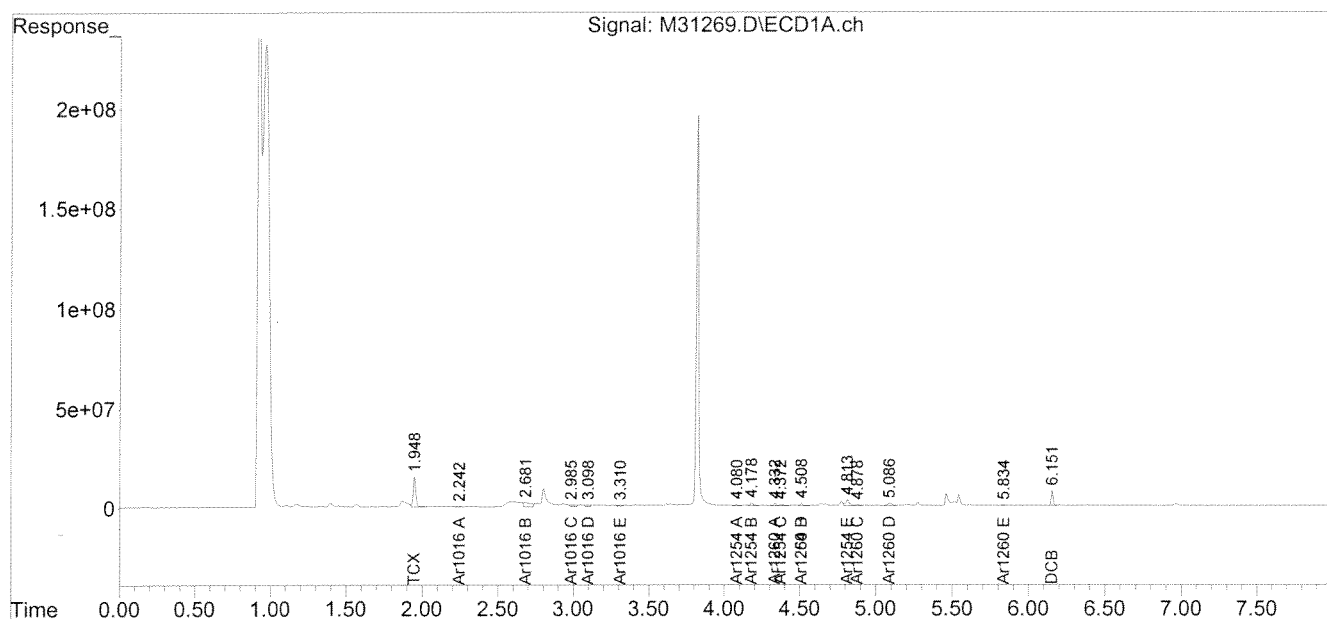
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\100410-M\  
Data File : M31269.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 5 Oct 2010 1:13 am  
Operator : JK  
Sample : 67921-5,,A/C  
Misc : SOIL  
ALS Vial : 62 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Oct 05 10:50:45 2010  
Quant Method : C:\msdchem\1\METHODS\PCB092710.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Tue Sep 28 09:49:19 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





## PCB QC FORMS

Instrument ID: M  
GC Column #1: STX-CLPesticides I  
Column ID: 0.25 mm  
GC Column #2: STX-CLPesticides II  
Column ID: 0.25 mm

[illegible]

# Column to be used to flag recovery values outside of QC limits  
\* Values outside QC limits  
D System Monitoring Compound diluted out

# PCB SOIL SYSTEM MONITORING COMPOUNDS SUMMARY

Instrument ID: M  
GC Column #1: STX-CLPesticides I  
Column ID: 0.25 mm  
GC Column #2: STX-CLPesticides II  
Column ID: 0.25 mm

SDG: 67921

[illegible]

	Lower Limit	Upper Limit
SMC #1 = TCX	40	130
SMC #2 = DCB	40	130

# Column to be used to flag recovery values outside of QC limits  
\* Values outside QC limits  
D System Monitoring Compound diluted out

PCB SOIL  
LABORATORY CONTROL SAMPLE/DUPLICATE  
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG: 67921

Non-spiked sample: B093010PSOX,,A/C

Spike: L093010PSOX,,A/C

Spike duplicate: LD093010PSOX,,A/C

	LCS SPIKE	LCSD SPIKE	LOWER	UPPER	RPD	NON-SPIKE	SPIKE	SPIKE		SPIKE DUP		SPIKE DUP		RPD	
COMPOUND	ADDED (ug/kg)	ADDED (ug/kg)	LIMIT	LIMIT	LIMIT	RESULT (ug/kg)	RESULT (ug/kg)	% REC	#	RESULT (ug/kg)	% REC	#	RPD	#	
PCB 1016	200	200	65	140	30	0	225	113		224	112		0.4		
PCB 1260	200	200	60	130	30	0	204	102		235	118		14.3		
PCB 1016 #2	200	200	65	140	30	0	253	127		260	130		2.7		
PCB 1260 #2	200	200	60	130	30	0	211	105		198	99		6.4		

# Column to be used to flag recovery and RPD values outside of QC limits

\* Values outside QC limits

LCS/LCSD spike added values have been weight adjusted.

Non-spiked result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: \_\_\_\_\_  
\_\_\_\_\_

PCB WIPE  
LABORATORY CONTROL SAMPLE/DUPLICATE  
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG:

Non-spiked sample: B093010PSOX,,A/C

Spike: L093010PSOXW,,A/C

Spike duplicate: LD093010PSOXW,,A/C

COMPOUND	LCS SPIKE ADDED (ug/wipe)	LCSD SPIKE ADDED (ug/wipe)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/wipe)	SPIKE RESULT (ug/wipe)	SPIKE % REC	SPIKE #	SPIKE DUP RESULT (ug/wipe)	SPIKE DUP % REC	SPIKE DUP #	RPD LIMIT	RPD #
PCB 1016	2.0	2.0	65	140	30	0.0	2.1	106		2.0	100		6.3	
PCB 1260	2.0	2.0	60	130	30	0.0	1.7	86		1.7	85		1.5	
PCB 1016 #2	2.0	2.0	65	140	30	0.0	2.4	122		2.2	110		9.9	
PCB 1260 #2	2.0	2.0	60	130	30	0.0	1.8	92		1.8	92		0.2	

# Column to be used to flag recovery and RPD values outside of QC limits

\* Values outside QC limits

LCS/LCSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: \_\_\_\_\_  
\_\_\_\_\_

## CHAIN OF CUSTODIES

# Chain Of Custody Form

		195 Commerce Way Suite E Portsmouth, NH 03801 Phone (603) 436-5111 Fax (603) 430-2151		For Analytics Use Only Rev. 5/06/18/08			
Project#: <u>210980</u> Company: <u>Woodard &amp; Curran</u> Contact: <u>Amy Wallace</u> Address: <u>35 New England Business Center Suite 180</u> <u>Andover, MA 01810</u> Phone: <u>(978) 557-8150</u> PO# _____ Quote # _____	Matrix Key: C = Concrete WP = Wipe WW = Wastewater SW = Surface Water GW = Groundwater DW = Drinking Water S = Soil/Sludge O = Oil E = Extract X = Other						
Proj. Name: <u>Peabody Te (Race)</u> Sampler (Signature): <u>Amy Wallace</u>	Samples were: 1) Shipped or hand-delivered 2) Temp blank °C <u>4°C</u> 3) Received in good condition Y or N 4) pH checked by: <u>N/A</u> 5) Labels checked by: <u>Ju 9-30-10</u>						
Station Identification <u>PTE-CBC-N-0847</u> <u>PTE-CBC-E-0848</u> <u>PTE-CBC-E-0849</u> <u>PTY-CBC-N-0850</u> <u>PTY-CBC-N-0851</u>	Sample Date <u>9/29/10</u> <u>9/29/10</u> <u>9/29/10</u> <u>9/29/10</u> <u>9/29/10</u>	Sample Time <u>0910</u> <u>1000</u> <u>1015</u> <u>1040</u> <u>1055</u>	Analysis <u>PCB</u> <u>PCB</u> <u>PCB</u> <u>PCB</u> <u>PCB</u>	Matrix <u>C</u> <u>C</u> <u>C</u> <u>C</u> <u>C</u>	Container number/type <u>1 G</u> <u>1 G</u> <u>1 G</u> <u>1 G</u> <u>1 G</u>	pH     	Analytics Sample # <u>67921-1</u> <u>-2</u> <u>-3</u> <u>-4</u> <u>-5</u>
Email Results to: <u>jwallace@woodardcurran.com</u>			Comments / Instructions:   <u>SOXhbt/8082</u>				
Turnaround Time (TAT) <input type="checkbox"/> 24hr* <input type="checkbox"/> 48hr* <input checked="" type="checkbox"/> 5 Days* <input type="checkbox"/> 72hr* <input type="checkbox"/> 10 Days			Project Requirements: *Fee may apply Report Type: <input checked="" type="checkbox"/> MCP* <input checked="" type="checkbox"/> Level II* <input type="checkbox"/> Level III* <input type="checkbox"/> Level IV* <input type="checkbox"/> Standard State: <input checked="" type="checkbox"/> NH <input type="checkbox"/> MA <input type="checkbox"/> ME <input type="checkbox"/> CT <input type="checkbox"/> RI Other: _____ State Standard: _____ (eg. S-1 or GW-1) EDD Required: <input checked="" type="checkbox"/> N Type: <u>GPS key</u>				
Relinquished By Sampler: <u>Amy Wallace</u> Date: <u>9/30/10</u> Time: <u>14:45</u>			Relinquished By: _____ Date: <u>9/30/10</u> Time: _____				
Relinquished By: _____ Date: _____ Time: _____			Relinquished By: _____ Date: _____ Time: _____				

ANALYTICS SAMPLE RECEIPT CHECKLIST

AEL LAB#: 67921  
 CLIENT: Woodard & Curran  
 PROJECT: Peabody Terrace

COOLER NUMBER: 41  
 NUMBER OF COOLERS: 1  
 DATE RECEIVED: 9/30/10

**A: PRELIMINARY EXAMINATION:**

DATE COOLER OPENED: 9/30/10  
 Date Received: 9/30/10

1. Cooler received by (initials): lmt

2. Circle one:

Hand delivered  
 (If so, skip 3)

Shipped

3. Did cooler come with a shipping slip?

N/A

Y

N

3a. Enter carrier name and airbill number here:

4. Were custody seals on the outside of cooler? N/A

Y

N

How many & where: \_\_\_\_\_ Seal Date: \_\_\_\_\_

Seal Name: \_\_\_\_\_

5. Did the custody seals arrive unbroken and intact upon arrival?

Y

N/A

6. COC#: N/A

7. Were Custody papers filled out properly (ink signed, etc)?

Y

N

8. Were custody papers sealed in a plastic bag?

Y

N

9. Did you sign the COC in the appropriate place?

Y

N

10. Was the project identifiable from the COC papers?

Y

N

11. Was enough ice used to chill the cooler?

Y N

Temp. of cooler: 4°C

**B. Log-In:** Date samples were logged in:

9/30/10

By: lmt

12. Type of packing in cooler (bubble wrap, popcorn)

Y

N

13. Were all bottles sealed in separate plastic bags?

Y

N/A

14. Did all bottles arrive unbroken and were labels in good condition?

Y

N

15. Were all bottle labels complete (ID, Date, time, etc.)

Y

N

16. Did all bottle labels agree with custody papers?

Y

N

17. Were the correct containers used for the tests indicated:

Y

N

18. Were samples received at the correct pH?

N/A

Y

N

19. Was sufficient amount of sample sent for the tests indicated?

Y

N

20. Were bubbles absent in VOA samples?

N/A

Y

N

If NO, List Sample ID's and Lab #s: \_\_\_\_\_

21. Laboratory labeling verified by (initials): ju

Date: 9.30.10



November 18, 2010

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

**RE:           Analytical Results Case Narrative**  
**Analytics # 68251**  
**Peabody Terrace Proj.#210980**

Dear Ms. Wallace;

Enclosed please find the analytical results for samples submitted for the above-mentioned project. The attached Cover Page lists the sample IDs, Lab tracking numbers and collection dates for the samples included in this deliverable.

Samples were analyzed for Polychlorinated Biphenyls (PCBs) by EPA Method 8082.

Unless otherwise noted in the Non-conformance Summary listed below, all of the quality control (QC) criteria including initial calibration, calibration verification, surrogate recovery, holding time and method accuracy/precision for these analyses were within acceptable limits.

This Level II data package has been assembled in the following order:

- Case Narrative/Non-Conformance Summary
- Sample Log Sheet - Cover Page
- PCB Form 1 Data Sheet for Samples and Blanks
- Chromatograms
- PCB Form 10 Confirmation Results
- PCB Form 3 MS/MSD (LCS) Recoveries
- Chain of Custody (COC) Forms

## QC NON-CONFORMANCE SUMMARY

**Sample Receipt:**

No exceptions.

**PCBs by EPA Method 8082:**

No results were reported below the quantitation limit.

If you have any questions on these results, please do not hesitate to contact me.

Sincerely,  
ANALYTICS Environmental Laboratory, LLC



Stephen L. Knollmeyer  
Laboratory Director

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

**Report Number: 68251**

**Revision: Rev. 0**

**Re: Peabody Terrace (Project No: 210980)**

Enclosed are the results of the analyses on your sample(s). Samples were received on 04 November 2010 and analyzed for the tests listed. Samples were received in acceptable condition, with the exceptions noted below or on the chain of custody. These results pertain to samples as received by the laboratory and for the analytical tests requested on the chain of custody. The results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. Please see individual reports for specific methodologies and references.

<u>Lab Number</u>	<u>Sample Date</u>	<u>Station Location</u>	<u>Analysis</u>	<u>Comments</u>
68251-1	11/02/10	PTY-CBC-24103-1012	EPA 8082 (PCBs only)	
68251-2	11/02/10	PTY-CBK-24103-1013	EPA 8082 (PCBs only)	
68251-3	11/02/10	PTF-CBK-3112-1014	EPA 8082 (PCBs only)	
68251-4	11/02/10	PTE-CBK-2811-1015	Electronic Data Deliverable	
	11/02/10	PTE-CBK-2811-1015	EPA 8082 (PCBs only)	

**Sample Receipt Exceptions: None**

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, Virginia, Maryland, and is accredited by the Department of Defense (DOD) ELAP program. A list of actual certified parameters is available upon request.

If you have any questions on these results, please do not hesitate to contact us.

Authorized signature

  
Stephen L. Knollmeyer Lab. Director

Date

11/18/2010

**This report shall not be reproduced, except in full, without the written consent of Analytics Environmental Laboratory, LLC.**

### MassDEP Analytical Protocol Certification Form

Laboratory Name: Analytics Environmental Laboratory, LLC

Project #: 68251

Project Location: Peabody Terrace

RTN:

**This Form provides certifications for the following data set. Laboratory Sample ID Number(s):**

68251-1, 68251-2, 68251-3, 68251-4

Matrices: ☐ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input type="checkbox"/>	7470/7471 Hg CAM III B <input type="checkbox"/>	MassDEP VPH CAM IV A <input type="checkbox"/>	8081 Pesticides CAM V B <input type="checkbox"/>	7196 Hex Cr CAM VI B <input type="checkbox"/>	MassDEP APH CAM IX A <input type="checkbox"/>
8270 SVOC CAM II B <input type="checkbox"/>	7010 Metals CAM III C <input type="checkbox"/>	MassDEP EPH CAM IV B <input type="checkbox"/>	8151 Herbicides CAM V C <input type="checkbox"/>	8330 Explosives CAM VIII A <input type="checkbox"/>	TO-15 VOC CAM IX B <input type="checkbox"/>
6010 Metals CAM III A <input type="checkbox"/>	6020 Metals CAM III D <input type="checkbox"/>	8082 PCB CAM V A <input checked="" type="checkbox"/>	9014 Total Cyanide/PAC CAM VI A <input type="checkbox"/>	6860 Perchlorate CAM VIII B <input type="checkbox"/>	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>D</b>	Does the laboratory report comply with all reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>E</b>	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**


<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>
----------	-----------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------

**Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.**

<b>H</b>	Were ALL QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>

<sup>1</sup> All negative responses must be addressed in an attached laboratory narrative.

**I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.**

Signature: 

Position: Laboratory Director

Printed Name: Stephen L. Knollmeyer

Date: November 18, 2010

### Surrogate Compound Limits

	Matrix: Units:	Aqueous % Recovery	Solid % Recovery	Method
Volatile Organic Compounds - Drinking Water				
1,4-Difluorobenzene		70-130		EPA 524.2
Bromofluorobenzene		70-130		
1,2-Dichlorobenzene-d4		70-130		
Volatile Organic Compounds				
1,2-Dichloroethane-d4		70-120	70-120	EPA 624/8260B
Toluene-d8		85-120	85-120	
Bromofluorobenzene		75-120	75-120	
Semi-Volatile Organic Compounds				
2-Fluorophenol		20-110	35-105	EPA 625/8270C
d5-Phenol		15-110	40-100	
d5-nitrobenzene		40-110	35-100	
2-Fluorobiphenyl		50-110	45-105	
2,4,6-Tribromophenol		40-110	40-125	
d14-p-terphenyl		50-130	30-125	
PAH's by SIM				
d5-nitrobenzene		21-110	35-110	EPA 8270C
2-Fluorobiphenyl		36-121	45-105	
d14-p-terphenyl		33-141	30-125	
Pesticides and PCBs				
2,4,5,6-Tetrachloro-m-xylene (TCX)		46-122	40-130	EPA 608/8082
Decachlorobiphenyl (DCB)		40-135	40-130	
Herbicides				
Dichloroacetic acid (DCAA)		30-150	30-150	
Gasoline Range Organics/TPH Gasoline				
Trifluorotoluene TFT (FID)		60-140	60-140	MEDEP 4217/EPA 8015
Bromofluorobenzene (BFB) (FID)		60-140	60-140	
Trifluorotoluene TFT (PID)		60-140	60-140	
Bromofluorobenzene (BFB) (PID)		60-140	60-140	
Diesel Range Organics/TPH Diesel				
m-terphenyl		60-140	60-140	MEDEP 4125/EPA 8015/CT ETPH
Volatile Petroleum Hydrocarbons				
2,5-Dibromotoluene (PID)		70-130	70-130	MADEP VPH May 2004 Rev1.1
2,5-Dibromotoluene (FID)		70-130	70-130	
Extracatable Petroleum Hydrocarbons				
1-chloro-octadecane (aliphatic)		40-140	40-140	MADEP EPH May 2004 Rev1.1
o-Terphenyl (aromatic)		40-140	40-140	
2-Fluorobiphenyl (Fractionation)		40-140	40-140	
2-Bromonaphthalene (fractionation)		40-140	40-140	

## PCB DATA SUMMARIES

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

November 18, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**  
**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** Lab QC

**Lab Sample ID:** B110810PSOX2 RR  
**Matrix:** Soil  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:**  
**Lab Receipt Date:**  
**Extraction Date:** 11/08/10  
**Analysis Date:** 11/15/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	103	%
Decachlorobiphenyl	68	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

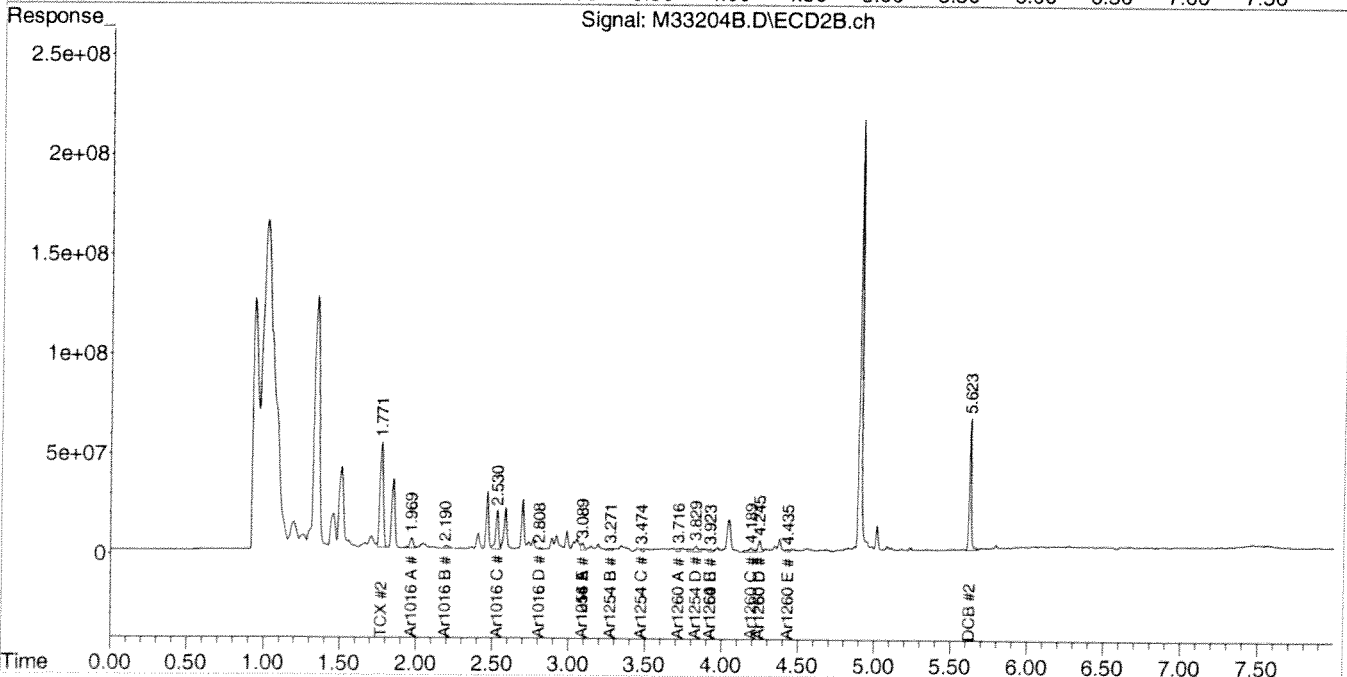
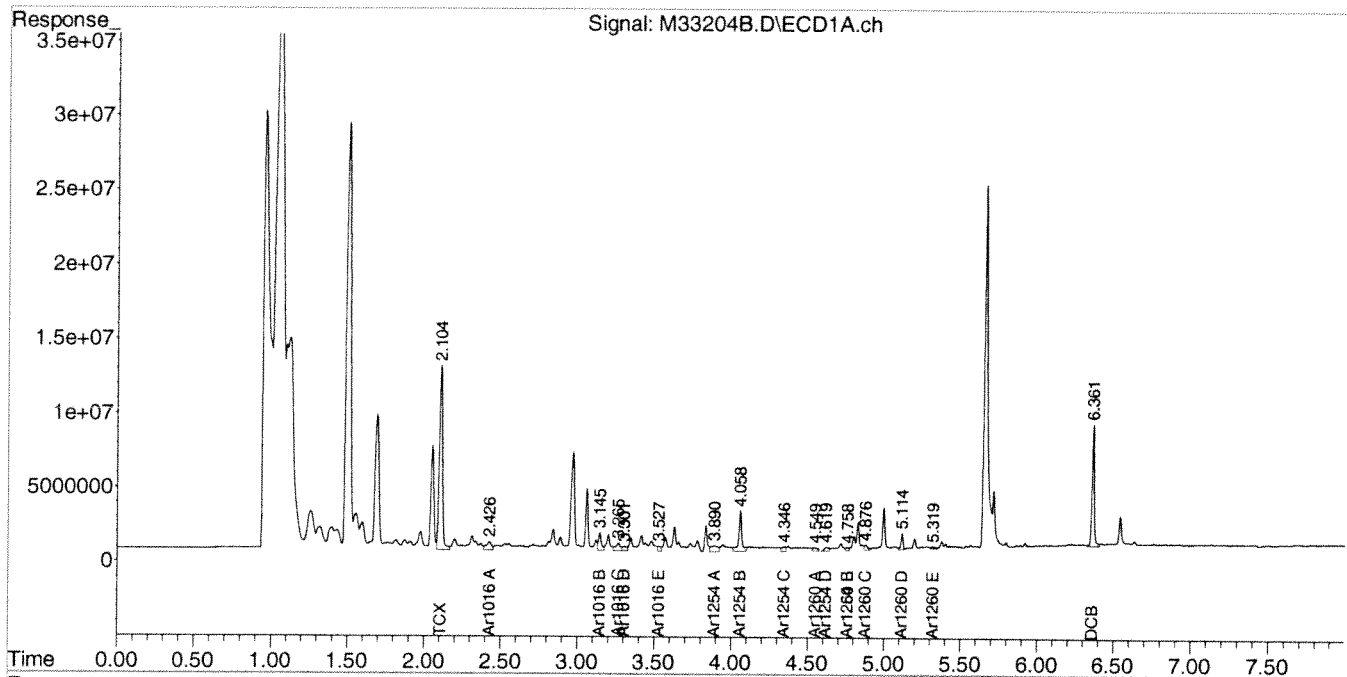
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\111510-M\  
 Data File : M33204B.D  
 Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
 Acq On : 15 Nov 2010 1:57 pm  
 Operator : JK  
 Sample : B110810PSOX2,RR2,,A/C  
 Misc : SOIL  
 ALS Vial : 6 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Nov 15 15:26:30 2010  
 Quant Method : C:\msdchem\1\METHODS\PCB110310.M  
 Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
 QLast Update : Wed Nov 03 16:48:45 2010  
 Response via : Initial Calibration  
 Integrator: ChemStation

Volume Inj. : 2 uL  
 Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
 Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

November 18, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace

**Project Number:** 210980

**Field Sample ID:** PTY-CBC-24103-1012

**Lab Sample ID:** 68251-1 RR

**Matrix:** Solid

**Percent Solid:** 98

**Dilution Factor:** 1.0

**Collection Date:** 11/02/10

**Lab Receipt Date:** 11/04/10

**Extraction Date:** 11/08/10

**Analysis Date:** 11/15/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	<b>73</b>
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	87	%
Decachlorobiphenyl	58	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 68251
GC Column #1: STX-CLPesticides I	Sample: 68251-1,RR,,A/C
Column ID: 0.25 mm	Data File: M33210.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 1.0
Column ID: 0.25 mm	

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	71	73	4.1	

# Column to be used to flag RPD values greater than QC limit of 40%

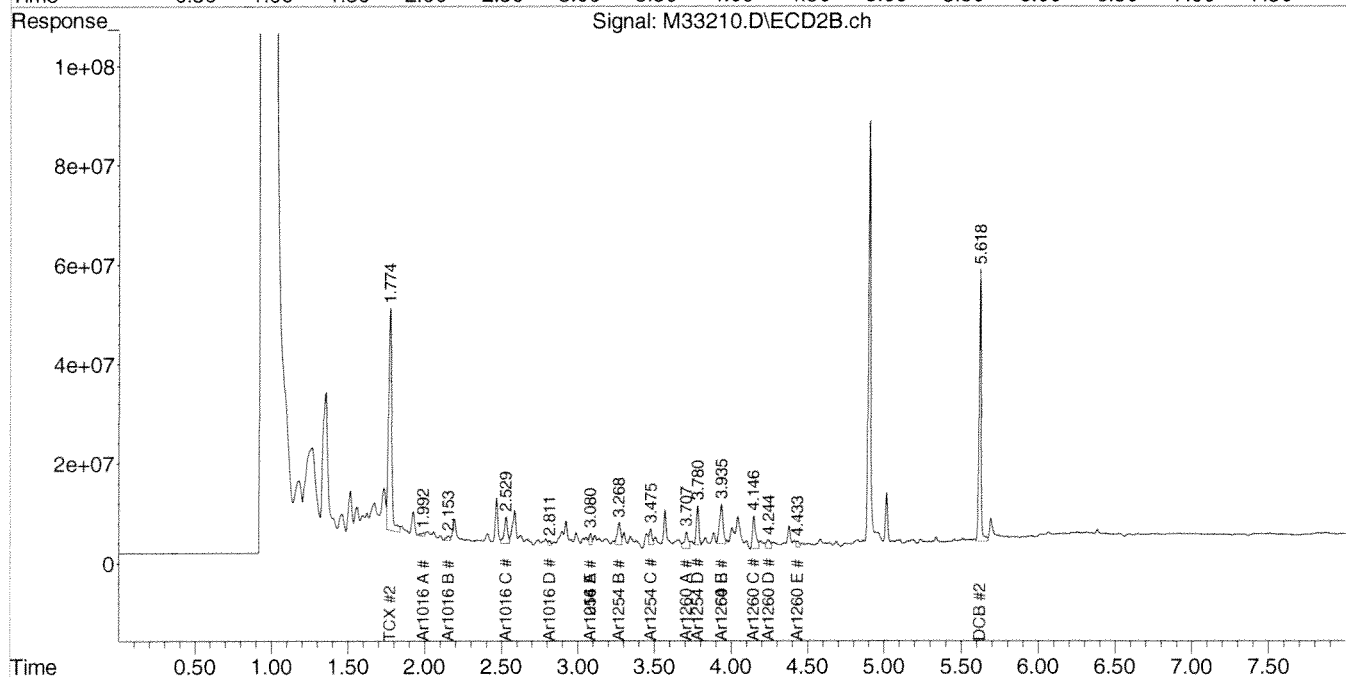
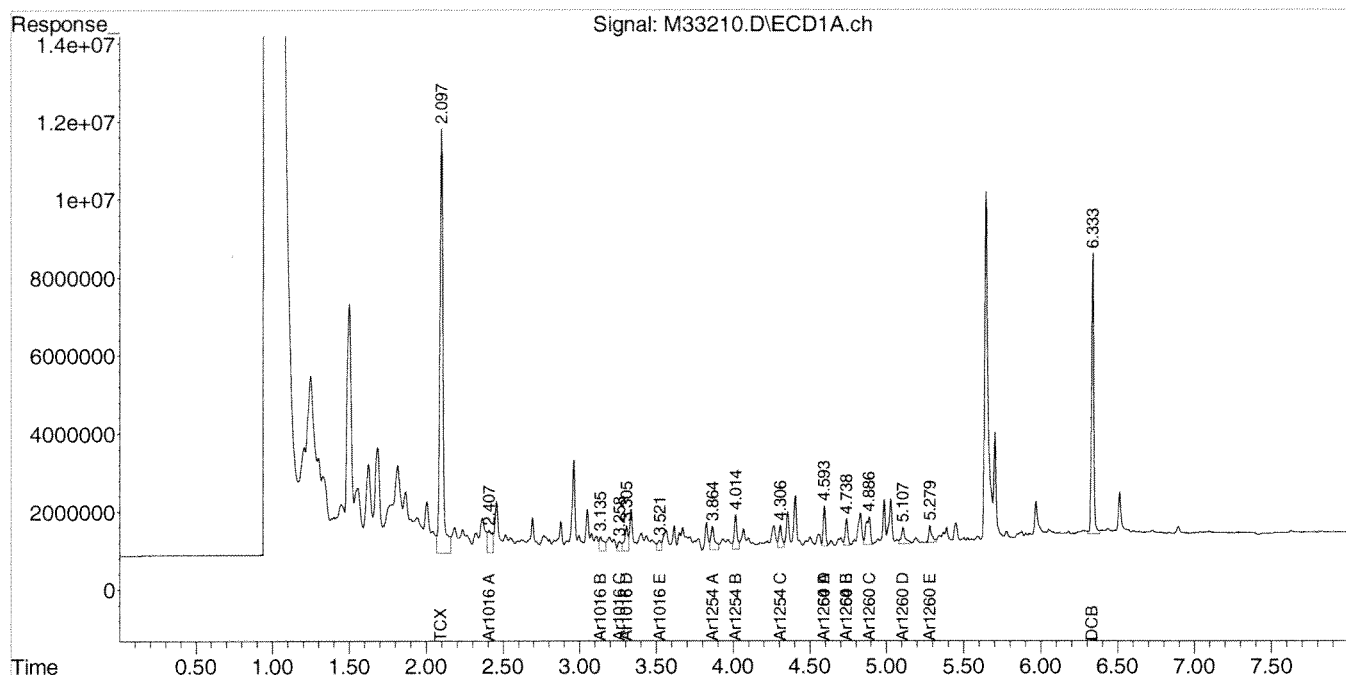
\* Values outside QC limits

Comments: \_\_\_\_\_

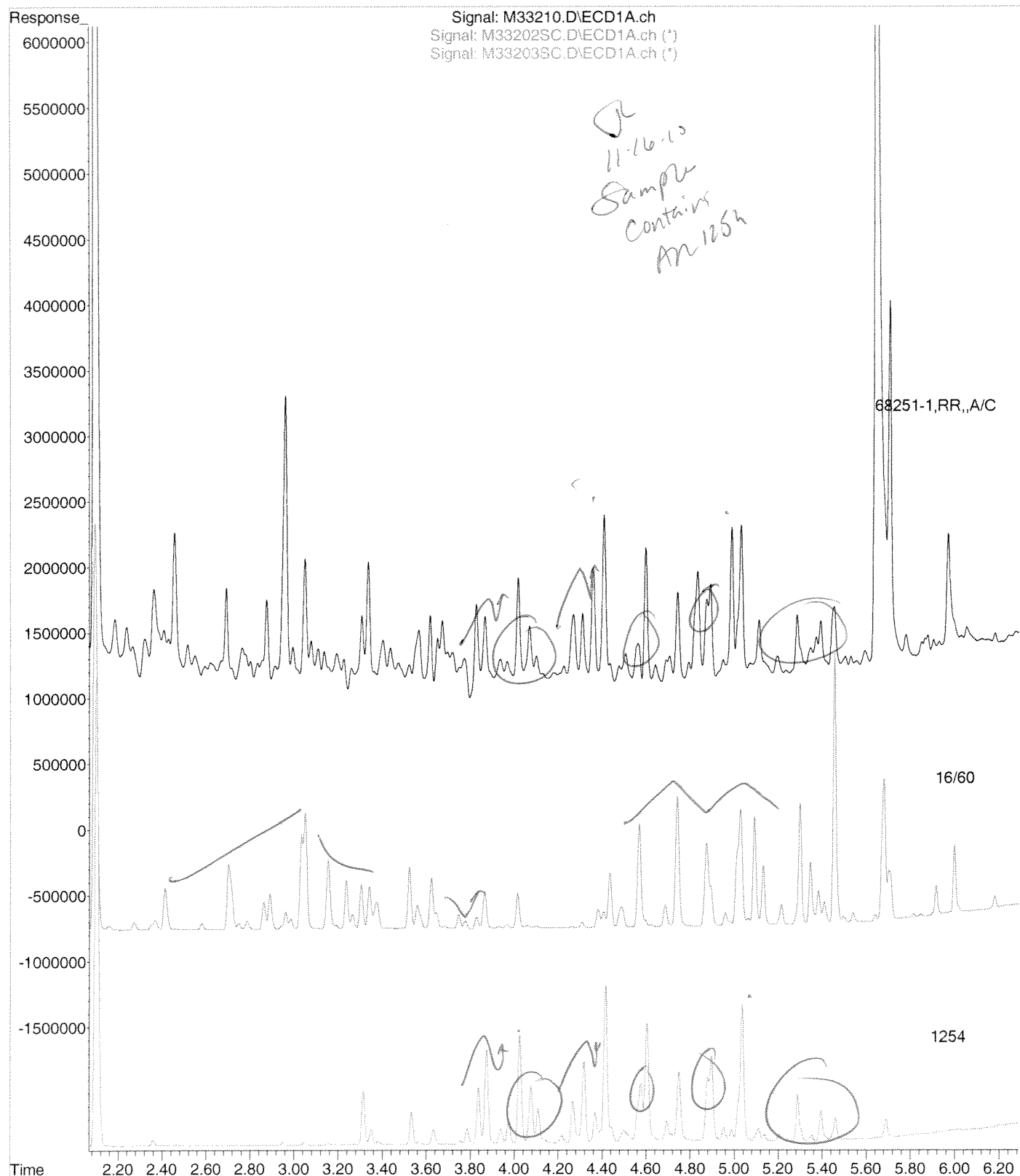
Data Path : C:\msdchem\1\DATA\111510-M\  
Data File : M33210.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 15 Nov 2010 2:59 pm  
Operator : JK  
Sample : 68251-1,RR,,A/C  
Misc : SOIL  
ALS Vial : 12 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Nov 16 08:57:00 2010  
Quant Method : C:\msdchem\1\METHODS\PCB110310.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Wed Nov 03 16:48:45 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



File :C:\msdchem\1\DATA\111510-M\M33210.D  
Operator : JK  
Acquired : 15 Nov 2010 2:59 pm using AcqMethod PEST.M  
Instrument : Instrument M  
Sample Name: 68251-1,RR,,A/C  
Misc Info : SOIL  
Vial Number: 12



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

November 18, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace

**Project Number:** 210980

**Field Sample ID:** PTY-CBK-24103-1013

**Lab Sample ID:** 68251-2

**Matrix:** Solid

**Percent Solid:** 96

**Dilution Factor:** 963

**Collection Date:** 11/02/10

**Lab Receipt Date:** 11/04/10

**Extraction Date:** 11/08/10

**Analysis Date:** 11/15/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	31800	U
PCB-1221	31800	U
PCB-1232	31800	U
PCB-1242	31800	U
PCB-1248	31800	U
PCB-1254	31800	737000
PCB-1260	31800	U
PCB-1262	31800	U
PCB-1268	31800	U
<b>Surrogate Standard Recovery</b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 68251
GC Column #1: STX-CLPesticides I	Sample: 68251-2,1:250,,A/C
Column ID: 0.25 mm	Data File: M33211.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 962.7
Column ID: 0.25 mm	

Column #1		Column #2		RPD	#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	736617	709706		3.7	

# Column to be used to flag RPD values greater than QC limit of 40%

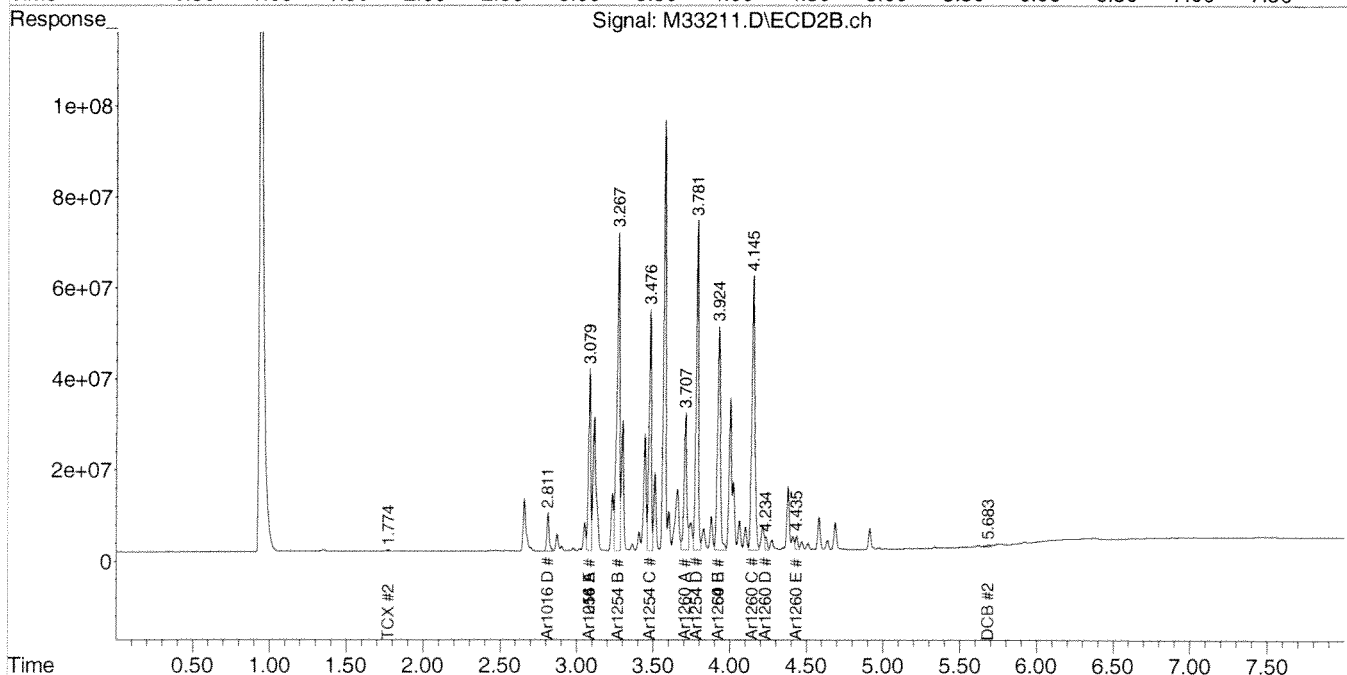
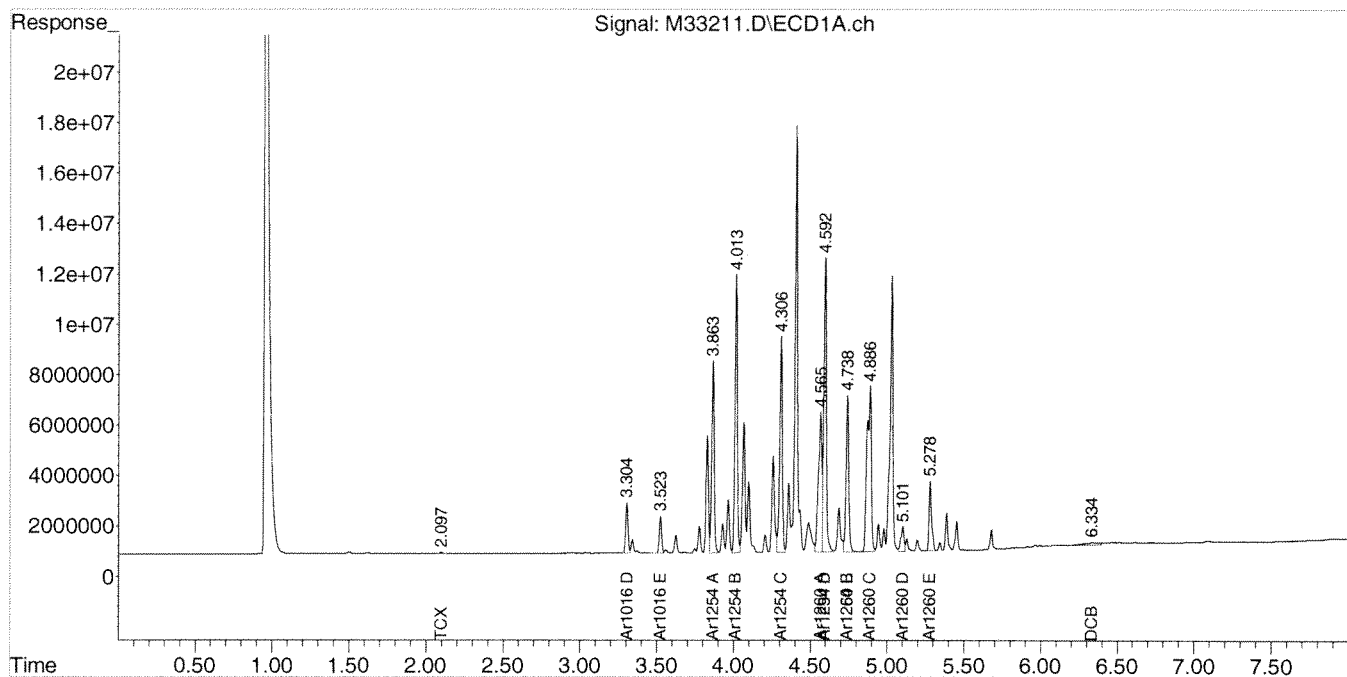
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\111510-M\  
Data File : M33211.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 15 Nov 2010 3:09 pm  
Operator : JK  
Sample : 68251-2,1:250,,A/C  
Misc : SOIL  
ALS Vial : 13 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Nov 15 15:26:44 2010  
Quant Method : C:\msdchem\1\METHODS\PCB110310.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Wed Nov 03 16:48:45 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

November 18, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CBK-3112-1014

**Lab Sample ID:** 68251-3  
**Matrix:** Solid  
**Percent Solid:** 100  
**Dilution Factor:** 1010  
**Collection Date:** 11/02/10  
**Lab Receipt Date:** 11/04/10  
**Extraction Date:** 11/08/10  
**Analysis Date:** 11/15/10

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33300	U
PCB-1221	33300	U
PCB-1232	33300	U
PCB-1242	33300	U
PCB-1248	33300	U
PCB-1254	33300	1040000
PCB-1260	33300	U
PCB-1262	33300	U
PCB-1268	33300	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.



PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 68251

GC Column #1: STX-CLPesticides I

Sample: 68251-3,1:500,,A/C

Column ID: 0.25 mm

Data File: M33212.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 1010.1

Column ID: 0.25 mm

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	1035058	997031	3.7	

# Column to be used to flag RPD values greater than QC limit of 40%

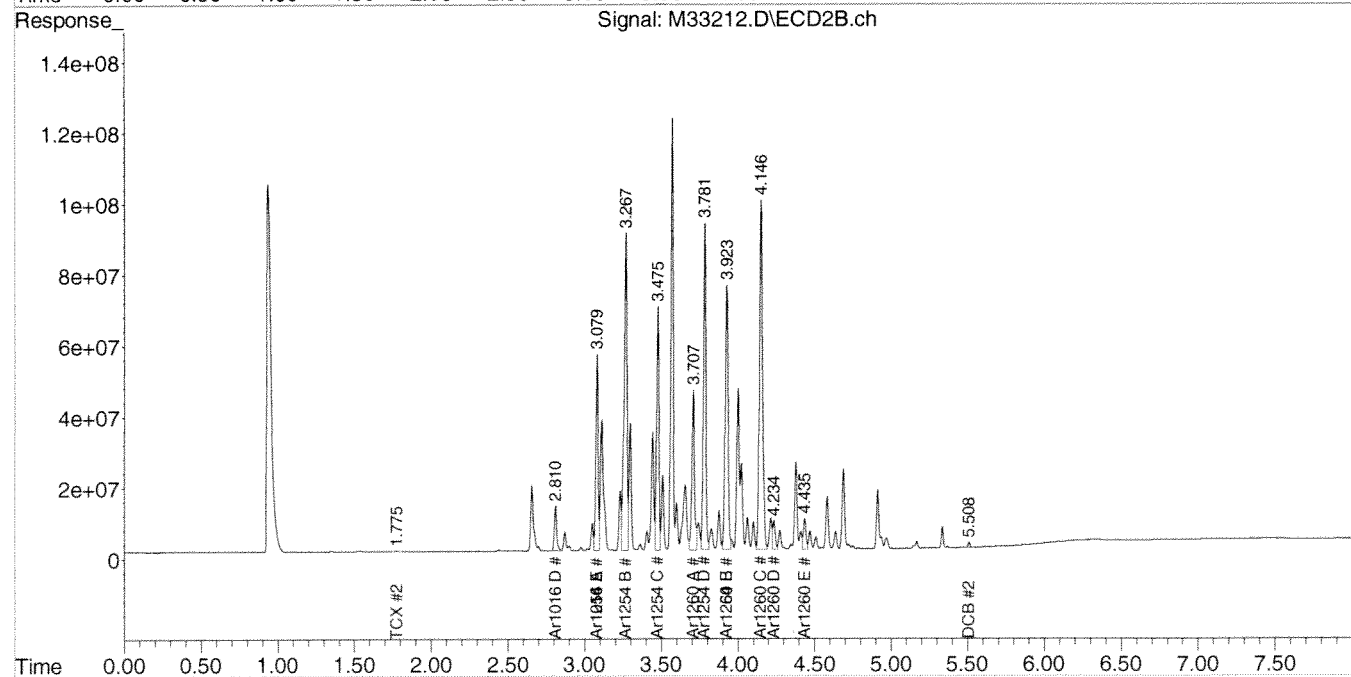
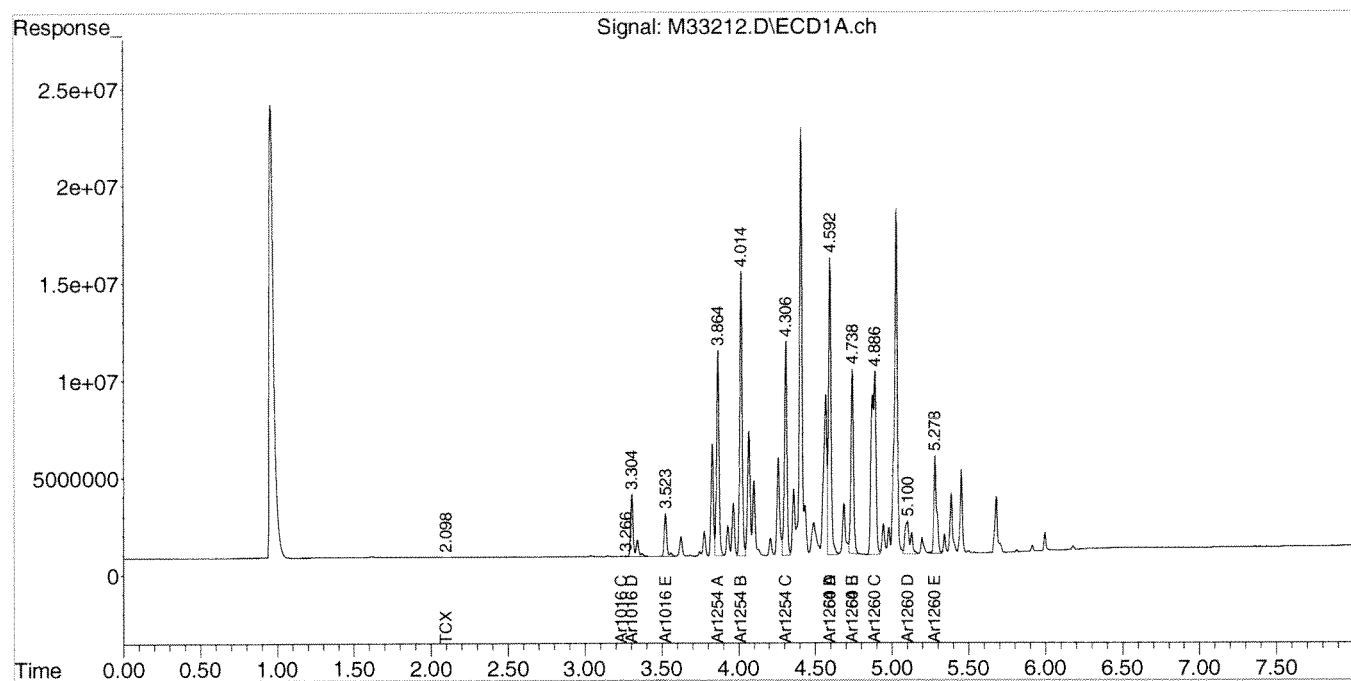
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\111510-M\  
Data File : M33212.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 15 Nov 2010 3:19 pm  
Operator : JK  
Sample : 68251-3,1:500,,A/C  
Misc : SOIL  
ALS Vial : 14 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Nov 15 15:54:03 2010  
Quant Method : C:\msdchem\1\METHODS\PCB110310.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Wed Nov 03 16:47:44 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

November 18, 2010

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CBK-2811-1015

**Lab Sample ID:** 68251-4  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 992  
**Collection Date:** 11/02/10  
**Lab Receipt Date:** 11/04/10  
**Extraction Date:** 11/08/10  
**Analysis Date:** 11/15/10

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	32700	U
PCB-1221	32700	U
PCB-1232	32700	U
PCB-1242	32700	403000
PCB-1248	32700	U
PCB-1254	32700	854000
PCB-1260	32700	U
PCB-1262	32700	U
PCB-1268	32700	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.  
\* The surrogates were diluted out.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 68251
GC Column #1: STX-CLPesticides I	Sample: 68251-4,1:100,,A/C
Column ID: 0.25 mm	Data File: M33213.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 991.8
Column ID: 0.25 mm	

COMPOUND	Column #1	Column #2	RPD		#
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	854141	797766	6.8		

# Column to be used to flag RPD values greater than QC limit of 40%

\* Values outside QC limits

Comments: \_\_\_\_\_

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 68251

GC Column #1: STX-CLPesticides I

Sample: 68251-4,1:100,,A/C

Column ID: 0.25 mm

Data File: M33213.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 991.8

Column ID: 0.25 mm

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1242	402848	394236	2.2	

# Column to be used to flag RPD values greater than QC limit of 40%

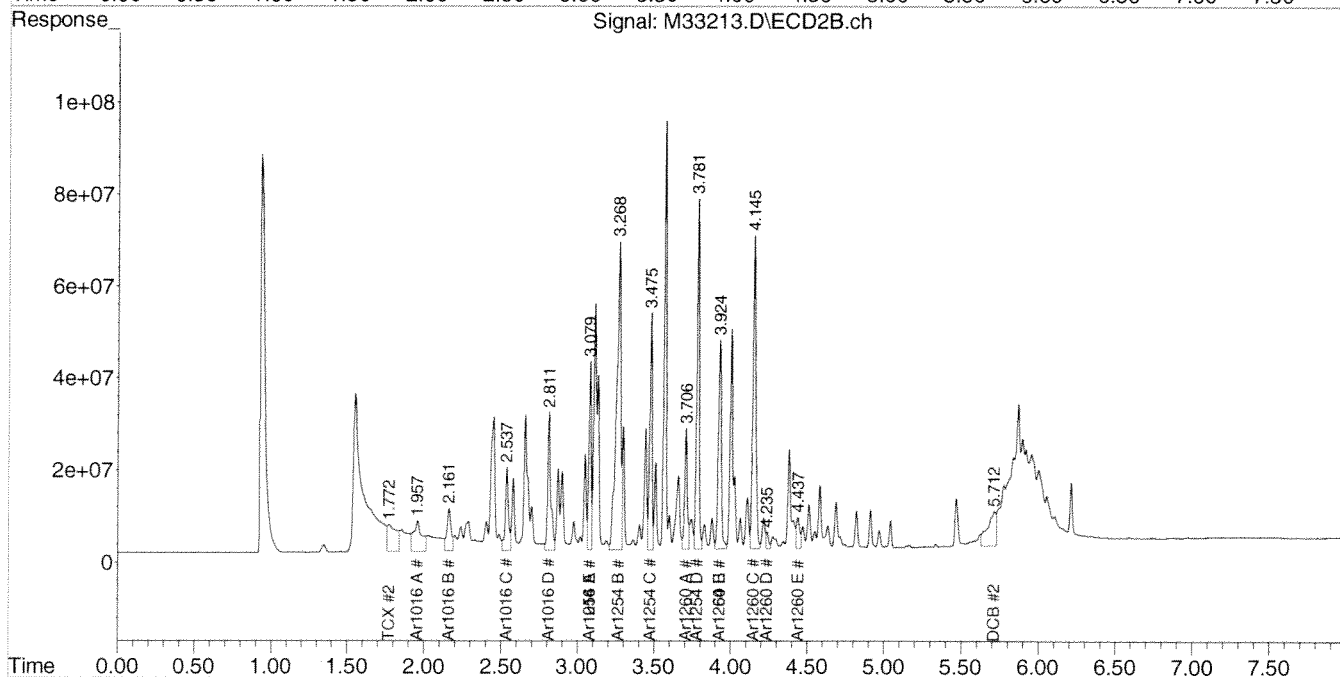
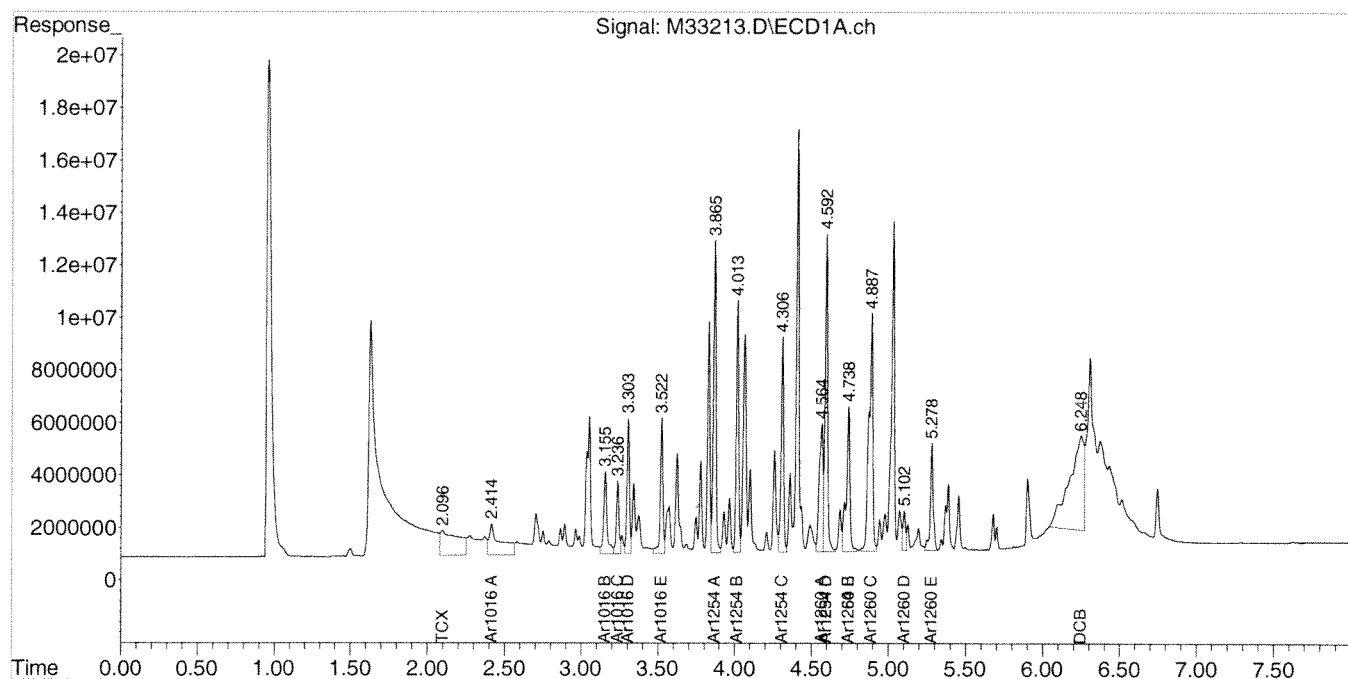
\* Values outside QC limits

Comments: \_\_\_\_\_

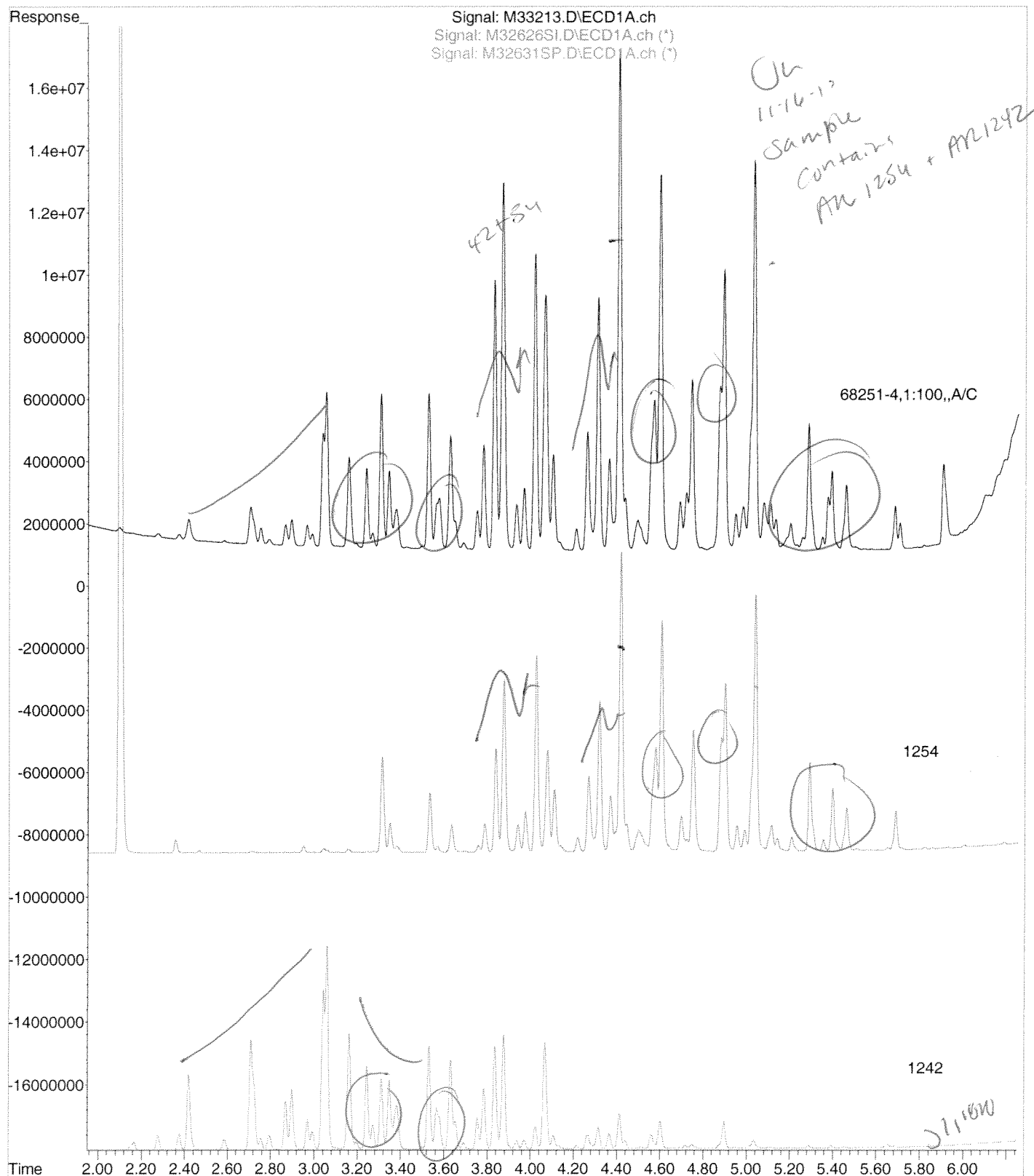
Data Path : C:\msdchem\1\DATA\111510-M\  
Data File : M33213.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 15 Nov 2010 3:29 pm  
Operator : JK  
Sample : 68251-4,1:100,,A/C  
Misc : SOIL  
ALS Vial : 15 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Nov 15 15:52:59 2010  
Quant Method : C:\msdchem\1\METHODS\PCB110310.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Wed Nov 03 16:47:44 2010  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



File :C:\msdchem\1\DATA\111510-M\M33213.D  
Operator : JK  
Acquired : 15 Nov 2010 3:29 pm using AcqMethod PEST.M  
Instrument : Instrument M  
Sample Name: 68251-4,1:100,,A/C  
Misc Info : SOIL  
Vial Number: 15



## PCB QC FORMS





PCB SOIL  
LABORATORY CONTROL SAMPLE/DUPLICATE  
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG: 68251

Non-spiked sample: B110810PSOX2,RR2,,A/C

Spike: L110810PSOX2,RR,,A/C

Spike duplicate: LD110810PSOX2,RR,,A/C

	LCS SPIKE	LCSD SPIKE	LOWER	UPPER	RPD	NON-SPIKE	SPIKE	SPIKE		SPIKE DUP		SPIKE DUP			
COMPOUND	ADDED (ug/kg)	ADDED (ug/kg)	LIMIT	LIMIT	LIMIT	RESULT (ug/kg)	RESULT (ug/kg)	% REC	#	RESULT (ug/kg)	% REC	#	RPD	#	
PCB 1016	200	200	65	140	30	0	232	116		237	118		1.9		
PCB 1260	200	200	60	130	30	0	226	113		229	115		1.4		
PCB 1016 #2	200	200	65	140	30	0	189	95		193	97		2.1		
PCB 1260 #2	200	200	60	130	30	0	220	110		226	113		2.9		

# Column to be used to flag recovery and RPD values outside of QC limits

\* Values outside QC limits

LCS/LCSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: \_\_\_\_\_  
\_\_\_\_\_

## CHAIN OF CUSTODIES

# Chain Of Custody Form

<b>analytics environmental laboratory LLC</b> 195 Commerce Way Suite E Portsmouth, NH 03801 Phone (603) 436-5111 Fax (603) 430-2151		For Analytics Use Only Rev. 5/06/18/08 Samples were: 1) Shipped or hand-delivered <u>Y</u> 2) Temp blank °C <u>40</u> 3) Received in good condition <u>Y</u> or N 4) pH checked by: <u>N/A</u> 5) Labels checked by: <u>08/11/4/10</u>	
Project#: <u>210980</u> Proj. Name: <u>Peabody Terrace</u> Company: <u>Woodard &amp; Curran</u> Contact: <u>Amy Wallace</u> Address: <u>35 New England Business Center Suite 180</u> <u>Andover, MA 01810</u>		Matrix Key: C = Concrete WP = Wipe WW = Wastewater SW = Surface Water GW = Groundwater DW = Drinking Water S = Soil/Sludge O = Oil E = Extract X = Other	
Phone: (978) 557-8150 PO# <u>Quote #</u> Sampler (Signature): <u>[Signature]</u>		Preservation Unpres <input checked="" type="checkbox"/> 4°C <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> HCL <input type="checkbox"/> Methanol <input type="checkbox"/> Other	
Station Identification PTY-CBK-24103-1012 PTY-CBK-24103-1013 PTF-CBK-3112-1014 PTE-CBK-2811-1015		Analysis PCBs PCBs PCBs PCBs	
Sample Date 11/21/10 11/21/10 11/21/10 11/21/10		Sample Time 1000 1010 1045 1100	
Container Key P=plastic G=glass Container number/type Matrix pH Analytics Sample #		Date: 11/4/10 11/4/10 11/3/10 11/4/10 11/4/10	
Relinquished By: <u>[Signature]</u> Date: 11/4/10 Time: 6:30		Relinquished By: <u>[Signature]</u> Date: 11/4/10 Time: 15:30	
Relinquished By: <u>[Signature]</u> Date: 11/4/10 Time: 11:00		Relinquished By: <u>[Signature]</u> Date: 11/4/10 Time: 11:00	
Email Results to: awallace@woodardcurran.com jhumele@		Project Requirements: *Fee may apply Report Type: <input checked="" type="checkbox"/> MCP* <input checked="" type="checkbox"/> Level II* <input type="checkbox"/> CTCRP* <input type="checkbox"/> Level III* <input type="checkbox"/> DOD* <input type="checkbox"/> Level IV* <input type="checkbox"/> Standard	
Turnaround Time (TAT) <input type="checkbox"/> 24hr* <input type="checkbox"/> 48hr* <input type="checkbox"/> 72hr* <input type="checkbox"/> 5 Days* <input checked="" type="checkbox"/> 10 Days		State Standard: State: <input checked="" type="checkbox"/> NH <input type="checkbox"/> MA <input type="checkbox"/> ME <input type="checkbox"/> CT <input type="checkbox"/> RI Other:	
Comments / Instructions: Soxhlet/8082 Coaster 115		Relinquished By: <u>[Signature]</u> Date: 11/4/10 Time: 11:00	

## ANALYTICS SAMPLE RECEIPT CHECKLIST

AEL LAB#: 68251CLIENT: WOODARDPROJECT: PEABODY TIER-COOLER NUMBER: 115NUMBER OF COOLERS: 1DATE RECEIVED: 11/4/10**A: PRELIMINARY EXAMINATION:**1. Cooler received by (initials): Van

2. Circle one:

Hand delivered  
(If so, skip 3)DATE COOLER OPENED: 11/4/10Date Received: 11/4/10

Shipped

3. Did cooler come with a shipping slip?

Y

N

3a. Enter carrier name and airbill number here:

4. Were custody seals on the outside of cooler?

Y

N

How many &amp; where:

Seal Date:

Seal Name:

5. Did the custody seals arrive unbroken and intact upon arrival?

Y

NA

6. COC#:

7. Were Custody papers filled out properly (ink, signed, etc)?

Y

N

8. Were custody papers sealed in a plastic bag?

Y

N

9. Did you sign the COC in the appropriate place?

Y

N

10. Was the project identifiable from the COC papers?

Y

N

11. Was enough ice used to chill the cooler?

Y

N

Temp. of cooler:

4°**B. Log-In:** Date samples were logged in:11/4/10By: Van

12. Type of packing in cooler (bubble wrap, popcorn)

Y

N

13. Were all bottles sealed in separate plastic bags?

Y 11/4/10 N

14. Did all bottles arrive unbroken and were labels in good condition?

Y

N

15. Were all bottle labels complete (ID, Date, time, etc.)

Y

N

16. Did all bottle labels agree with custody papers?

Y

N

17. Were the correct containers used for the tests indicated:

Y

N

18. Were samples received at the correct pH?

Y

NA

19. Was sufficient amount of sample sent for the tests indicated?

Y

N

20. Were bubbles absent in VOA samples?

Y

NA

If NO, List Sample ID's and Lab #s:

21. Laboratory labeling verified by (initials):

CPDate: 11/4/10

February 9, 2011

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

**RE: Analytical Results Case Narrative  
Analytics # 68995  
Peabody Terrace Proj.#210980**

Dear Ms. Wallace;

Enclosed please find the analytical results for samples submitted for the above-mentioned project. The attached Cover Page lists the sample IDs, Lab tracking numbers and collection dates for the samples included in this deliverable.

Samples were analyzed for Polychlorinated Biphenyls (PCBs) by EPA Method 8082.

Unless otherwise noted in the Non-conformance Summary listed below, all of the quality control (QC) criteria including initial calibration, calibration verification, surrogate recovery, holding time and method accuracy/precision for these analyses were within acceptable limits.

This Level II data package has been assembled in the following order:

- Case Narrative/Non-Conformance Summary
- Sample Log Sheet - Cover Page
- PCB Form 1 Data Sheet for Samples and Blanks
- Chromatograms
- PCB Form 10 Confirmation Results
- PCB Form 3 MS/MSD (LCS) Recoveries
- Chain of Custody (COC) Forms

## QC NON-CONFORMANCE SUMMARY

**Sample Receipt:**

No exceptions.

**PCBs by EPA Method 8082:**

No results were reported below the quantitation limit.

Decachlorobiphenyl surrogate results were outside of laboratory acceptance criteria for samples 68995-1 thru 68995-4 due to sample matrix interference. Surrogate Tetrachloro-m-xylene was in control. Results were reported with a comment to this affect.

Samples 68995-5 and 68995-6 required dilution due to the concentrations of PCBs detected.

If you have any questions on these results, please do not hesitate to contact me.

Sincerely,

ANALYTICS Environmental Laboratory, LLC



Stephen L. Knollmeyer  
Laboratory Director

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

**Report Number: 68995**

**Revision: Rev. 0**

**Re: Peabody Terrace (Project No: 210980)**

Enclosed are the results of the analyses on your sample(s). Samples were received on 01 February 2011 and analyzed for the tests listed. Samples were received in acceptable condition, with the exceptions noted below or on the chain of custody. These results pertain to samples as received by the laboratory and for the analytical tests requested on the chain of custody. The results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. Please see individual reports for specific methodologies and references.

<u>Lab Number</u>	<u>Sample Date</u>	<u>Station Location</u>	<u>Analysis</u>	<u>Comments</u>
68995-1	01/31/11	PTE-CBK-CR01-1134	EPA 8082 (PCBs only)	
68995-2	01/31/11	PTE-CBK-CR01-1135	EPA 8082 (PCBs only)	
68995-3	01/31/11	PTE-CBK-CR01-1136	EPA 8082 (PCBs only)	
68995-4	01/31/11	PTF-CBK-DC03-1137	EPA 8082 (PCBs only)	
68995-5	01/31/11	PTF-CBK-DC03-1138	EPA 8082 (PCBs only)	
68995-6	01/31/11	PTF-CBK-DC03-1139	Electronic Data Deliverable	
	01/31/11	PTF-CBK-DC03-1139	EPA 8082 (PCBs only)	

**Sample Receipt Exceptions:** None

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, Virginia, Maryland, and is accredited by the Department of Defense (DOD) ELAP program. A list of actual certified parameters is available upon request.

If you have any questions on these results, please do not hesitate to contact us.

Authorized signature

  
Stephen L. Knollmeyer Lab. Director

Date

02/09/2011

**This report shall not be reproduced, except in full, without the written consent of Analytics Environmental Laboratory, LLC.**



### MassDEP Analytical Protocol Certification Form

Laboratory Name: Analytics Environmental Laboratory, LLC

Project #: 68995

Project Location: Peabody Terrace

RTN:

**This Form provides certifications for the following data set. Laboratory Sample ID Number(s):**

68995-1, 68995-2, 68995-3, 68995-4, 68995-5, 68995-6

Matrices: ☐ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☒ Other

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input type="checkbox"/>	7470/7471 Hg CAM III B <input type="checkbox"/>	MassDEP VPH CAM IV A <input type="checkbox"/>	8081 Pesticides CAM V B <input type="checkbox"/>	7196 Hex Cr CAM VI B <input type="checkbox"/>	MassDEP APH CAM IX A <input type="checkbox"/>
8270 SVOC CAM II B <input type="checkbox"/>	7010 Metals CAM III C <input type="checkbox"/>	MassDEP EPH CAM IV B <input type="checkbox"/>	8151 Herbicides CAM V C <input type="checkbox"/>	8330 Explosives CAM VIII A <input type="checkbox"/>	TO-15 VOC CAM IX B <input type="checkbox"/>
6010 Metals CAM III A <input type="checkbox"/>	6020 Metals CAM III D <input type="checkbox"/>	8082 PCB CAM V A <input checked="" type="checkbox"/>	9014 Total Cyanide/PAC CAM VI A <input type="checkbox"/>	6860 Perchlorate CAM VIII B <input type="checkbox"/>	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>D</b>	Does the laboratory report comply with all reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>E</b>	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>
----------	-----------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------

**Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.**

<b>H</b>	Were ALL QC performance standards specified in the CAM protocol(s) achieved?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>

<sup>1</sup> All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature: Melissa Gulli Position: Assistant Laboratory Director

Printed Name: Melissa Gulli

Date: February 09, 2011

### Surrogate Compound Limits

	Matrix: Units:	Aqueous % Recovery	Solid % Recovery	Method
<b>Volatile Organic Compounds - Drinking Water</b>				
1,4-Difluorobenzene		70-130		EPA 524.2
Bromofluorobenzene		70-130		
1,2-Dichlorobenzene-d4		70-130		
<b>Volatile Organic Compounds</b>				
1,2-Dichloroethane-d4		70-120	70-120	EPA 624/8260B
Toluene-d8		85-120	85-120	
Bromofluorobenzene		75-120	75-120	
<b>Semi-Volatile Organic Compounds</b>				
2-Fluorophenol		20-110	35-105	EPA 625/8270C
d5-Phenol		15-110	40-100	
d5-nitrobenzene		40-110	35-100	
2-Fluorobiphenyl		50-110	45-105	
2,4,6-Tribromophenol		40-110	40-125	
d14-p-terphenyl		50-130	30-125	
<b>PAH's by SIM</b>				
d5-nitrobenzene		21-110	35-110	EPA 8270C
2-Fluorobiphenyl		36-121	45-105	
d14-p-terphenyl		33-141	30-125	
<b>Pesticides and PCBs</b>				
2,4,5,6-Tetrachloro-m-xylene (TCX)		46-122	40-130	EPA 608/8082
Decachlorobiphenyl (DCB)		40-135	40-130	
<b>Herbicides</b>				
Dichloroacetic acid (DCAA)		30-150	30-150	
<b>Gasoline Range Organics/TPH Gasoline</b>				
Trifluorotoluene TFT (FID)		60-140	60-140	MEDEP 4217/EPA 8015
Bromofluorobenzene (BFB) (FID)		60-140	60-140	
Trifluorotoluene TFT (PID)		60-140	60-140	
Bromofluorobenzene (BFB) (PID)		60-140	60-140	
<b>Diesel Range Organics/TPH Diesel</b>				
m-terphenyl		60-140	60-140	MEDEP 4125/EPA 8015/CT ETPH
<b>Volatile Petroleum Hydrocarbons</b>				
2,5-Dibromotoluene (PID)		70-130	70-130	MADEP VPH May 2004 Rev1.1
2,5-Dibromotoluene (FID)		70-130	70-130	
<b>Extracatable Petroleum Hydrocarbons</b>				
1-chloro-octadecane (aliphatic)		40-140	40-140	MADEP EPH May 2004 Rev1.1
o-Terphenyl (aromatic)		40-140	40-140	
2-Fluorobiphenyl (Fractionation)		40-140	40-140	
2-Bromonaphthalene (fractionation)		40-140	40-140	

## PCB DATA SUMMARIES

Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

February 9, 2011

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** Lab QC

**Lab Sample ID:** B020711PSOX  
**Matrix:** Soil  
**Percent Solid:** N/A  
**Dilution Factor:** 1.0  
**Collection Date:**  
**Lab Receipt Date:**  
**Extraction Date:** 02/07/11  
**Analysis Date:** 02/08/11

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	92 %	
Decachlorobiphenyl	54 %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

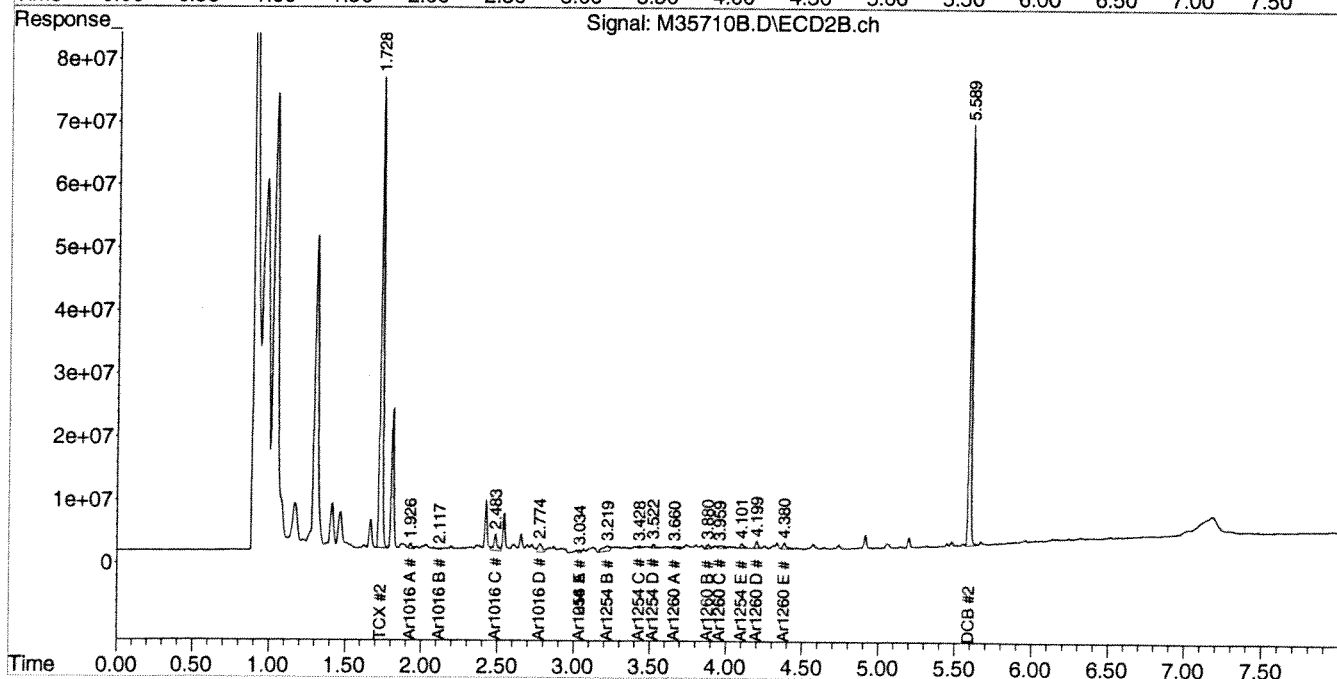
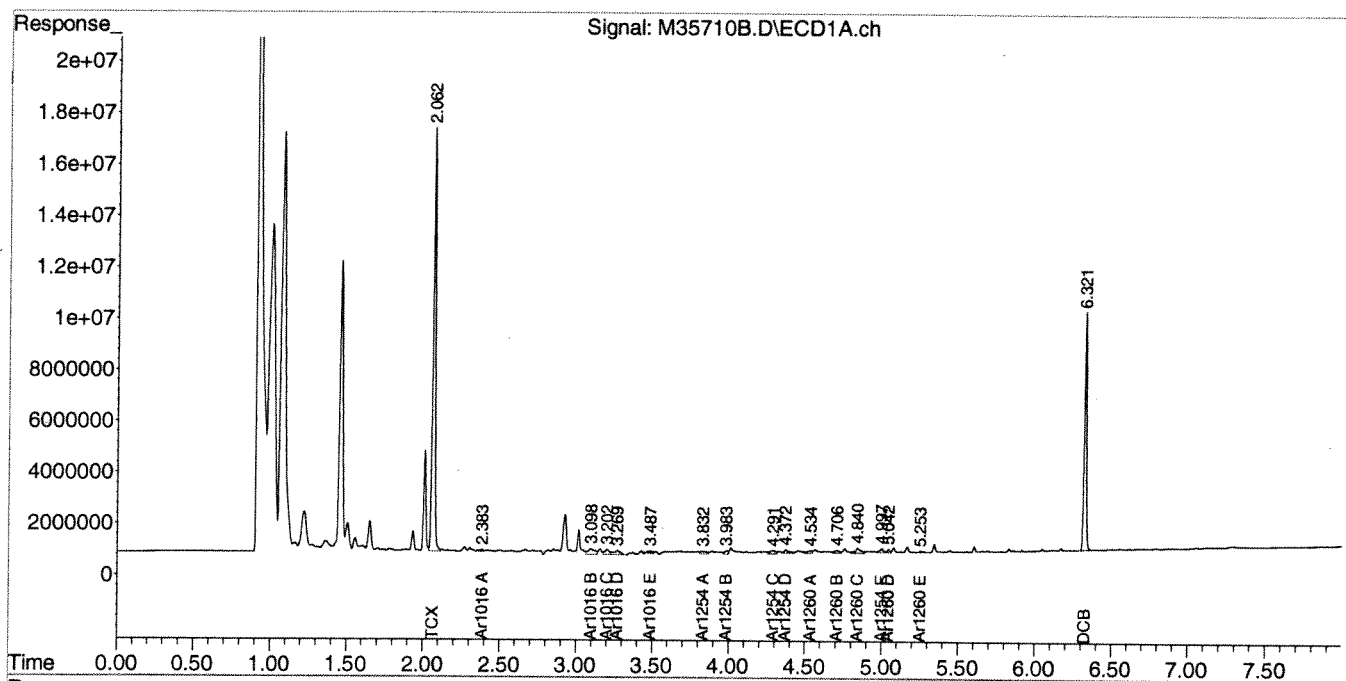
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\020811-M\  
Data File : M35710B.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 8 Feb 2011 12:43 pm  
Operator : JK  
Sample : B020711PSOX,,A/C  
Misc : SOIL  
ALS Vial : 6 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Feb 09 10:39:11 2011  
Quant Method : C:\msdchem\1\METHODS\PCB020711.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Mon Feb 07 15:27:39 2011  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

February 9, 2011

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CBK-CR01-1134

**Lab Sample ID:** 68995-1  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 9  
**Collection Date:** 01/31/11  
**Lab Receipt Date:** 02/01/11  
**Extraction Date:** 02/07/11  
**Analysis Date:** 02/08/11

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	300	U
PCB-1221	300	U
PCB-1232	300	U
PCB-1242	300	U
PCB-1248	300	U
PCB-1254	300	U
PCB-1260	300	U
PCB-1262	300	U
PCB-1268	300	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	80 %	
Decachlorobiphenyl	10667* %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

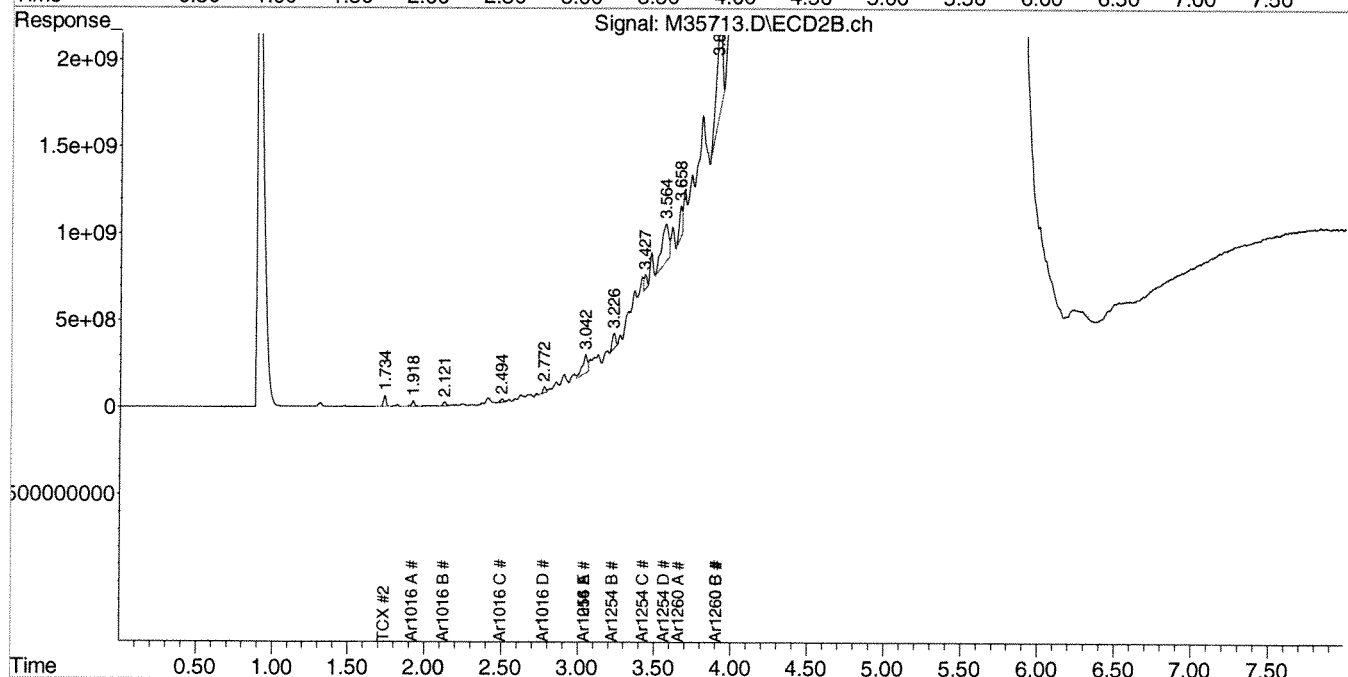
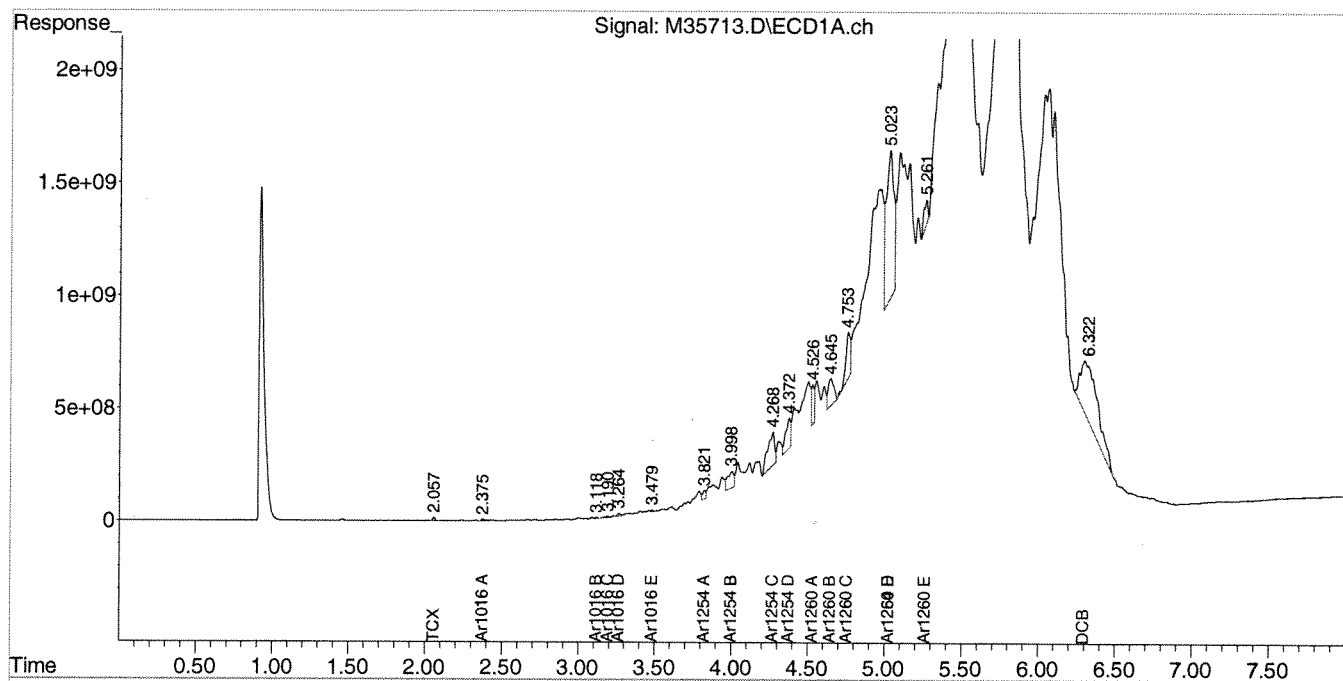
COMMENTS: Results are expressed on a dry weight basis.

\* Surrogate recovery outside control limits due to sample matrix interference. Secondary surrogate is in control.

Data Path : C:\msdchem\1\DATA\020811-M\  
Data File : M35713.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 8 Feb 2011 1:13 pm  
Operator : JK  
Sample : 68995-1,,A/C  
Misc : SOIL  
ALS Vial : 9 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Feb 09 10:39:17 2011  
Quant Method : C:\msdchem\1\METHODS\PCB020711.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Mon Feb 07 15:22:15 2011  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

February 9, 2011

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CBK-CR01-1135

**Lab Sample ID:** 68995-2  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 8  
**Collection Date:** 01/31/11  
**Lab Receipt Date:** 02/01/11  
**Extraction Date:** 02/07/11  
**Analysis Date:** 02/08/11

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	260	U
PCB-1221	260	U
PCB-1232	260	U
PCB-1242	260	U
PCB-1248	260	U
PCB-1254	260	U
PCB-1260	260	U
PCB-1262	260	U
PCB-1268	260	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	65 %	
Decachlorobiphenyl	10601* %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

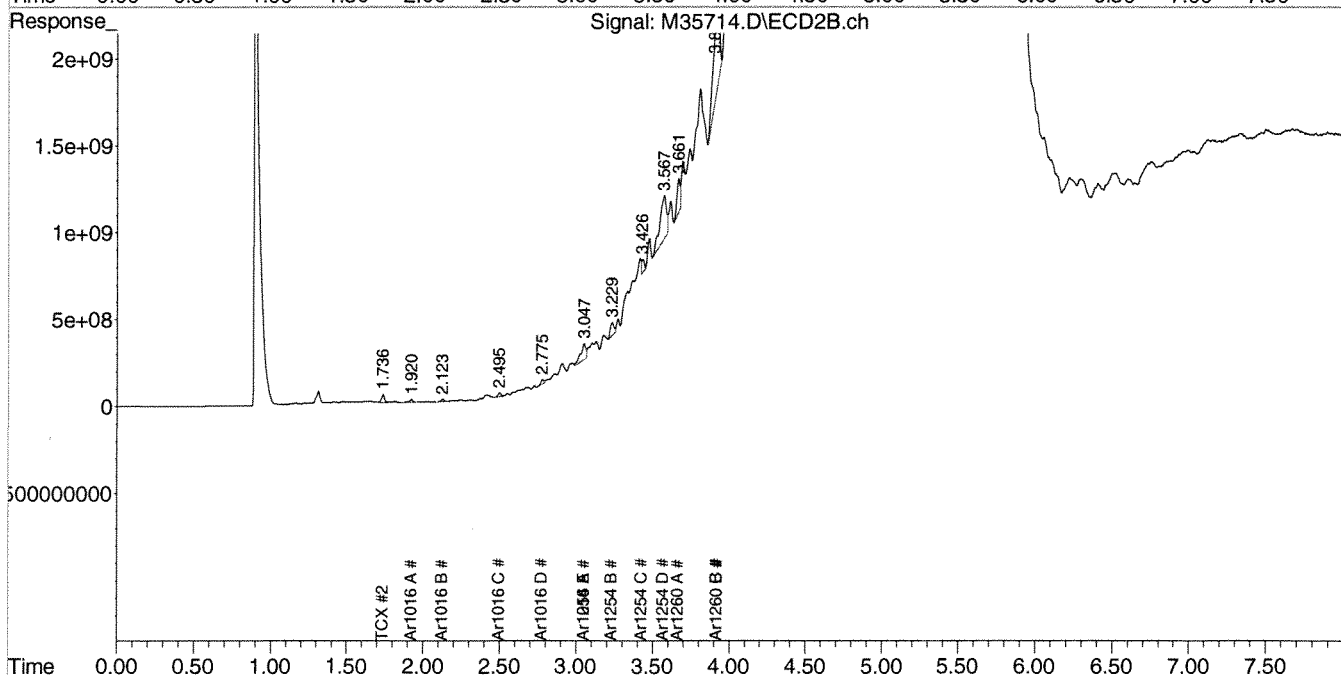
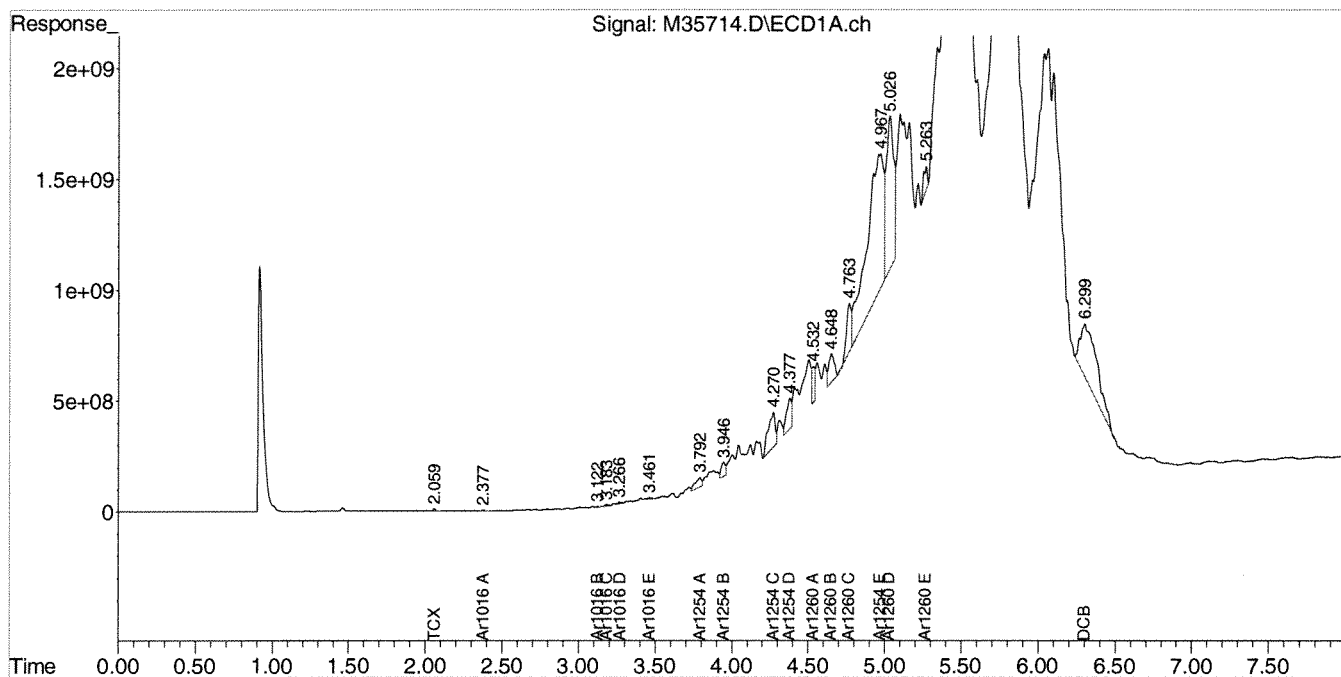
\* Surrogate recovery outside control limits due to sample matrix interference. Secondary surrogate is in control.



Data Path : C:\msdchem\1\DATA\020811-M\  
Data File : M35714.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 8 Feb 2011 1:24 pm  
Operator : JK  
Sample : 68995-2,,A/C  
Misc : SOIL  
ALS Vial : 10 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Feb 09 10:39:19 2011  
Quant Method : C:\msdchem\1\METHODS\PCB020711.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Mon Feb 07 15:22:15 2011  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

February 9, 2011

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTE-CBK-CR01-1136

**Lab Sample ID:** 68995-3  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 9  
**Collection Date:** 01/31/11  
**Lab Receipt Date:** 02/01/11  
**Extraction Date:** 02/07/11  
**Analysis Date:** 02/08/11

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	300	U
PCB-1221	300	U
PCB-1232	300	U
PCB-1242	300	U
PCB-1248	300	U
PCB-1254	300	U
PCB-1260	300	U
PCB-1262	300	U
PCB-1268	300	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	62 %	
Decachlorobiphenyl	7957* %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

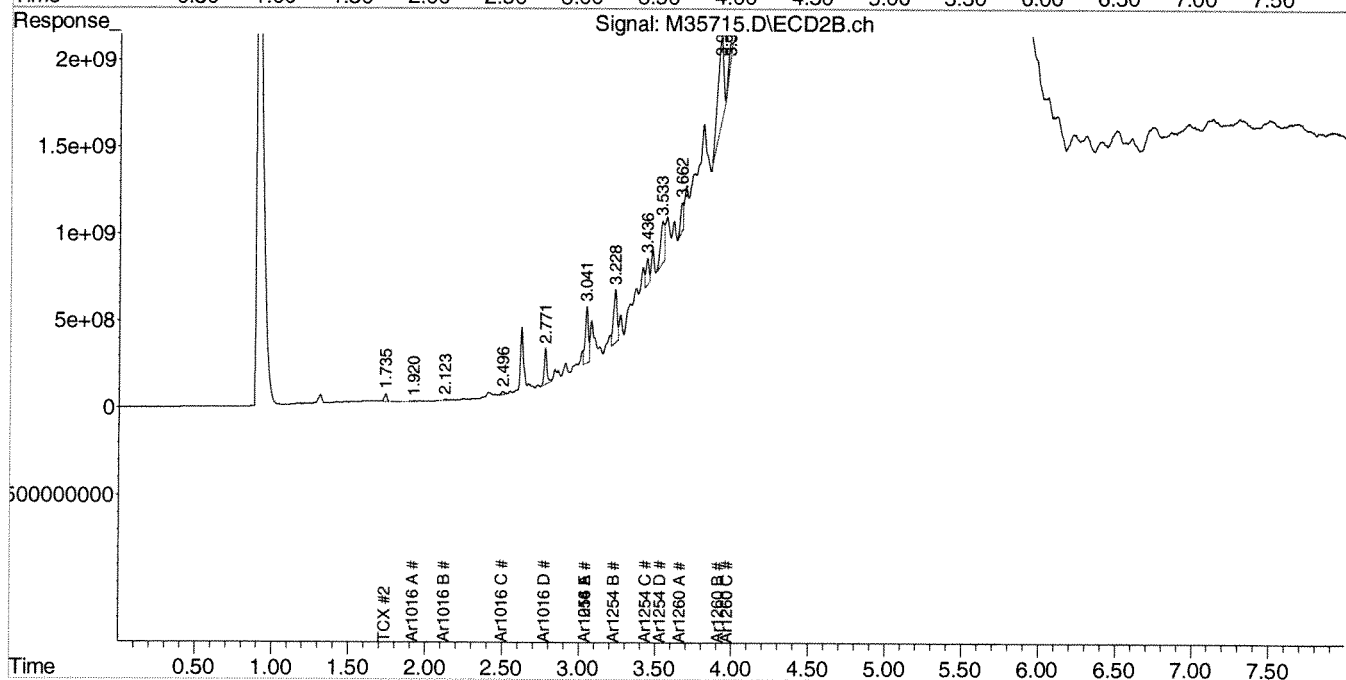
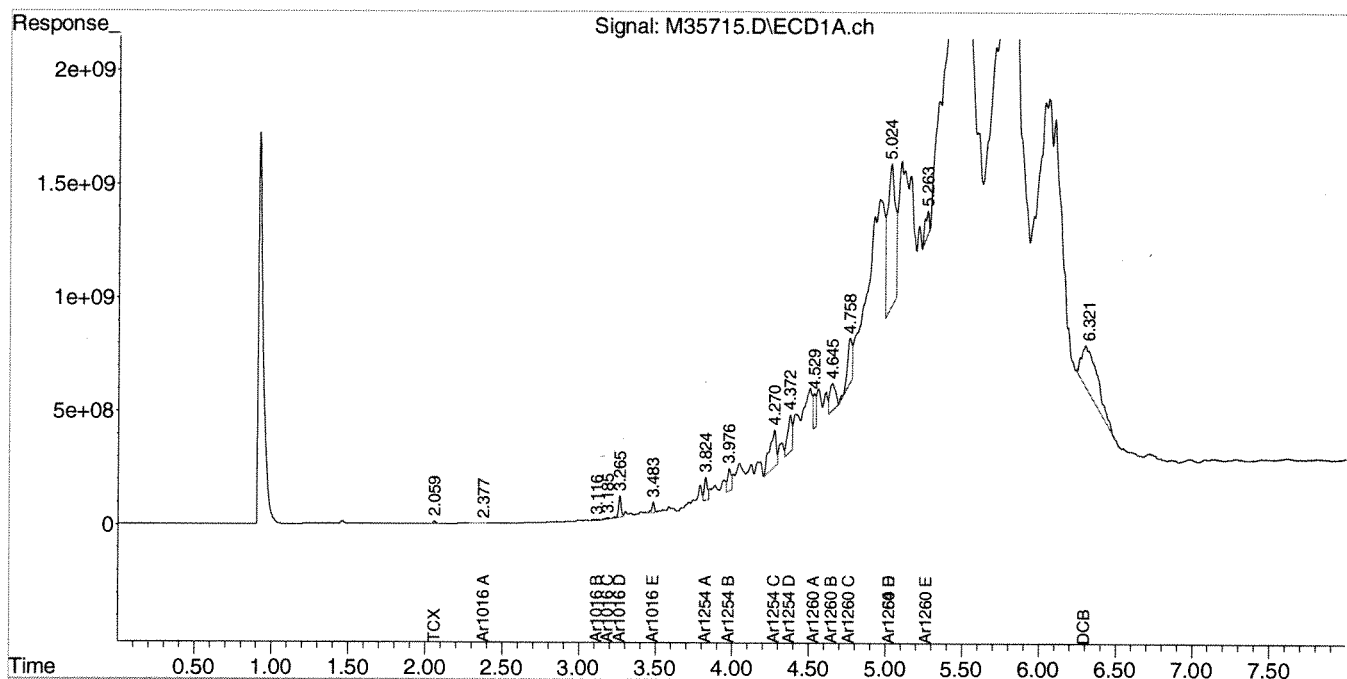
COMMENTS: Results are expressed on a dry weight basis.

\* Surrogate recovery outside control limits due to sample matrix interference. Secondary surrogate is in control.

Data Path : C:\msdchem\1\DATA\020811-M\  
Data File : M35715.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 8 Feb 2011 1:34 pm  
Operator : JK  
Sample : 68995-3,,A/C  
Misc : SOIL  
ALS Vial : 11 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Feb 09 10:39:21 2011  
Quant Method : C:\msdchem\1\METHODS\PCB020711.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Mon Feb 07 15:22:15 2011  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

February 9, 2011

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CBK-DC03-1137

**Lab Sample ID:** 68995-4  
**Matrix:** Solid  
**Percent Solid:** 98  
**Dilution Factor:** 10  
**Collection Date:** 01/31/11  
**Lab Receipt Date:** 02/01/11  
**Extraction Date:** 02/07/11  
**Analysis Date:** 02/08/11

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	330	U
PCB-1221	330	U
PCB-1232	330	U
PCB-1242	330	U
PCB-1248	330	U
PCB-1254	330	U
PCB-1260	330	U
PCB-1262	330	U
PCB-1268	330	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	74 %	
Decachlorobiphenyl	1273* %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

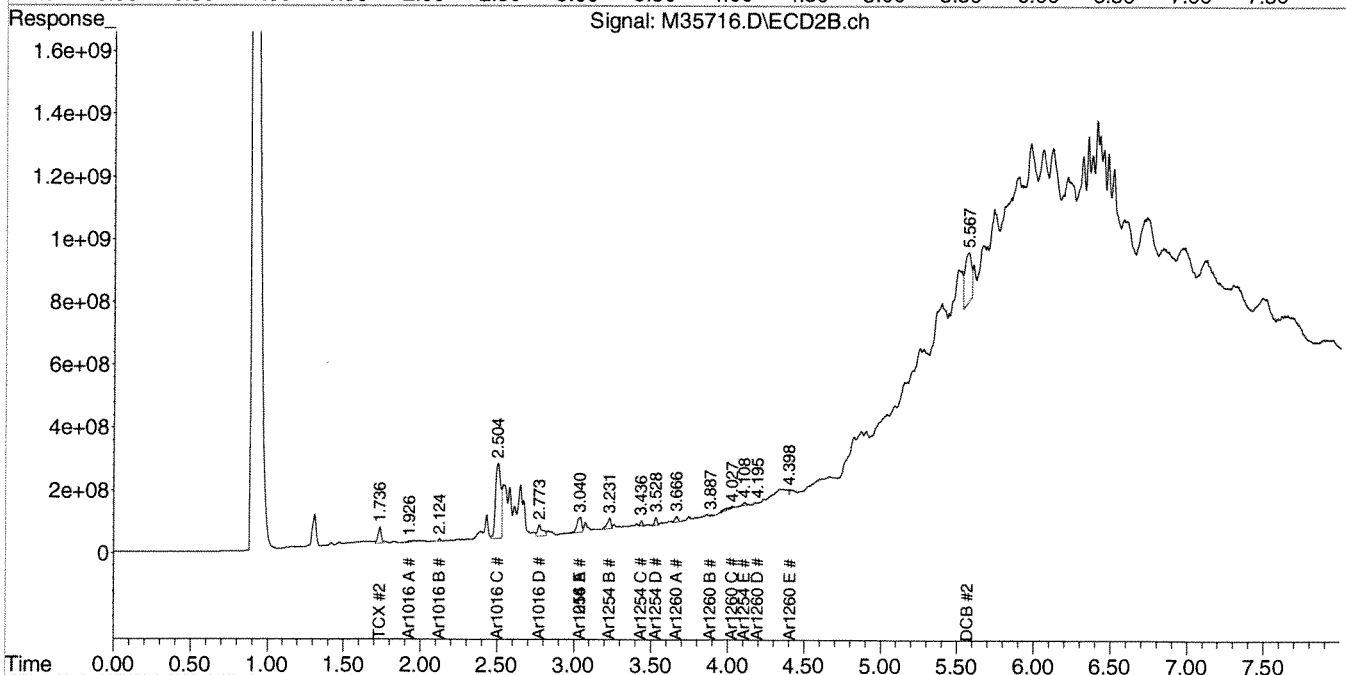
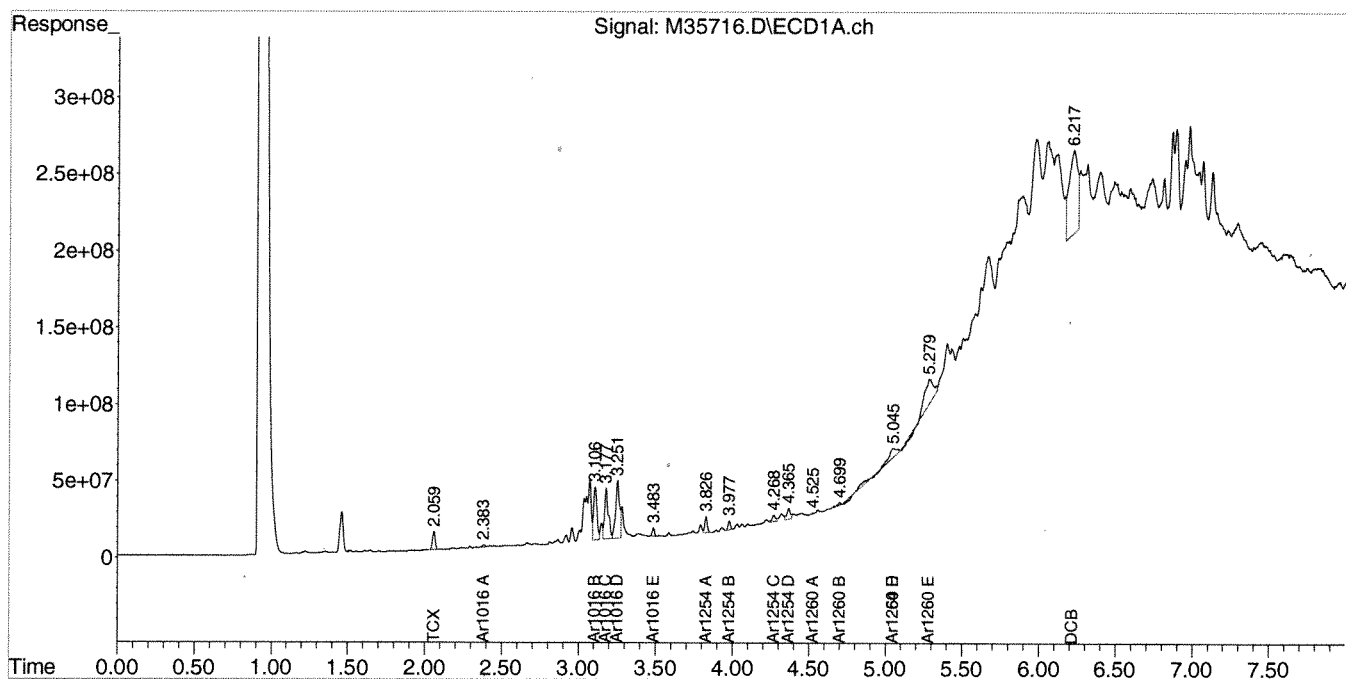
COMMENTS: Results are expressed on a dry weight basis.

\* Surrogate recovery outside control limits due to sample matrix interference. Secondary surrogate is in control.

Data Path : C:\msdchem\1\DATA\020811-M\  
Data File : M35716.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 8 Feb 2011 1:44 pm  
Operator : JK  
Sample : 68995-4,,A/C  
Misc : SOIL  
ALS Vial : 12 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Feb 09 10:39:23 2011  
Quant Method : C:\msdchem\1\METHODS\PCB020711.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Mon Feb 07 15:22:15 2011  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

February 9, 2011

**SAMPLE DATA**

**CLIENT SAMPLE ID**

---

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CBK-DC03-1138

**Lab Sample ID:** 68995-5  
**Matrix:** Solid  
**Percent Solid:** 99  
**Dilution Factor:** 46  
**Collection Date:** 01/31/11  
**Lab Receipt Date:** 02/01/11  
**Extraction Date:** 02/07/11  
**Analysis Date:** 02/08/11

PCB ANALYTICAL RESULTS		
COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	1520	U
PCB-1221	1520	U
PCB-1232	1520	U
PCB-1242	1520	U
PCB-1248	1520	U
PCB-1254	1520	<b>19000</b>
PCB-1260	1520	U
PCB-1262	1520	U
PCB-1268	1520	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	82	%
Decachlorobiphenyl	63	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 68995
GC Column #1: STX-CLPesticides I	Sample: 68995-5,1:5,,A/C
Column ID: 0.25 mm	Data File: M35723.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 45.6
Column ID: 0.25 mm	

Column #1		Column #2			
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#	
PCB 1254	16733	18975	12.6		

# Column to be used to flag RPD values greater than QC limit of 40%

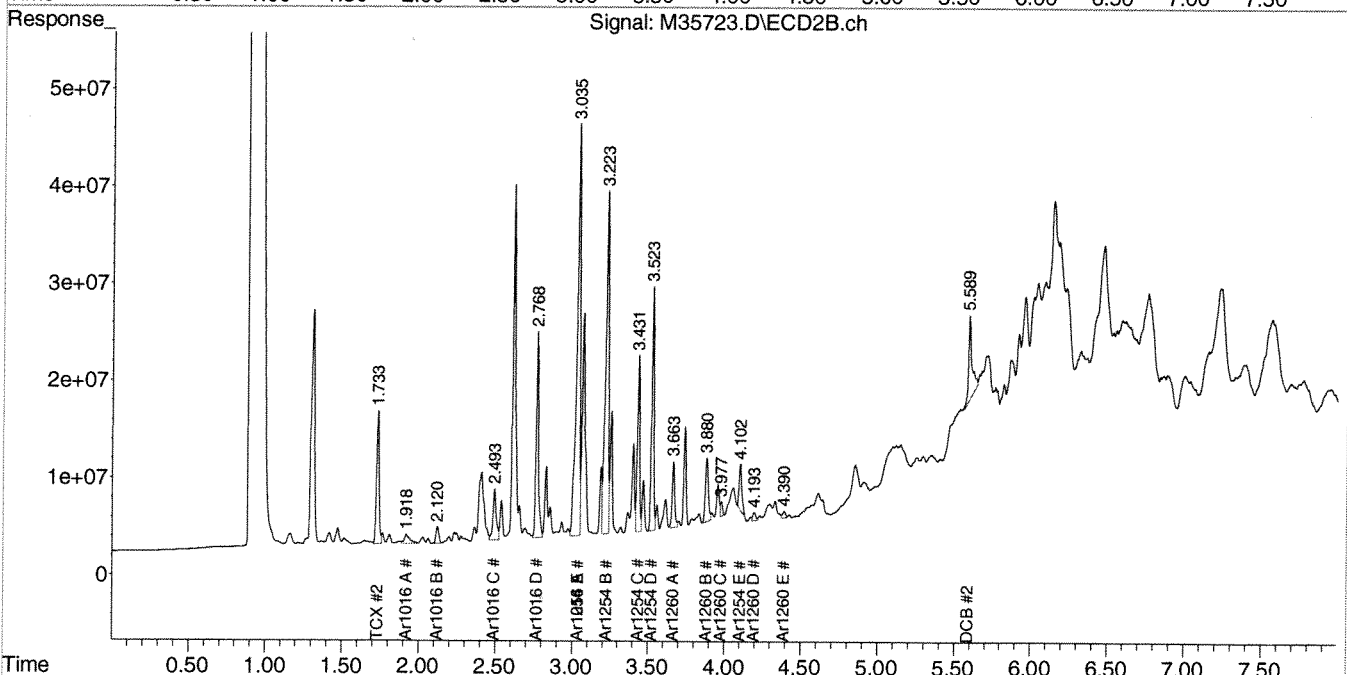
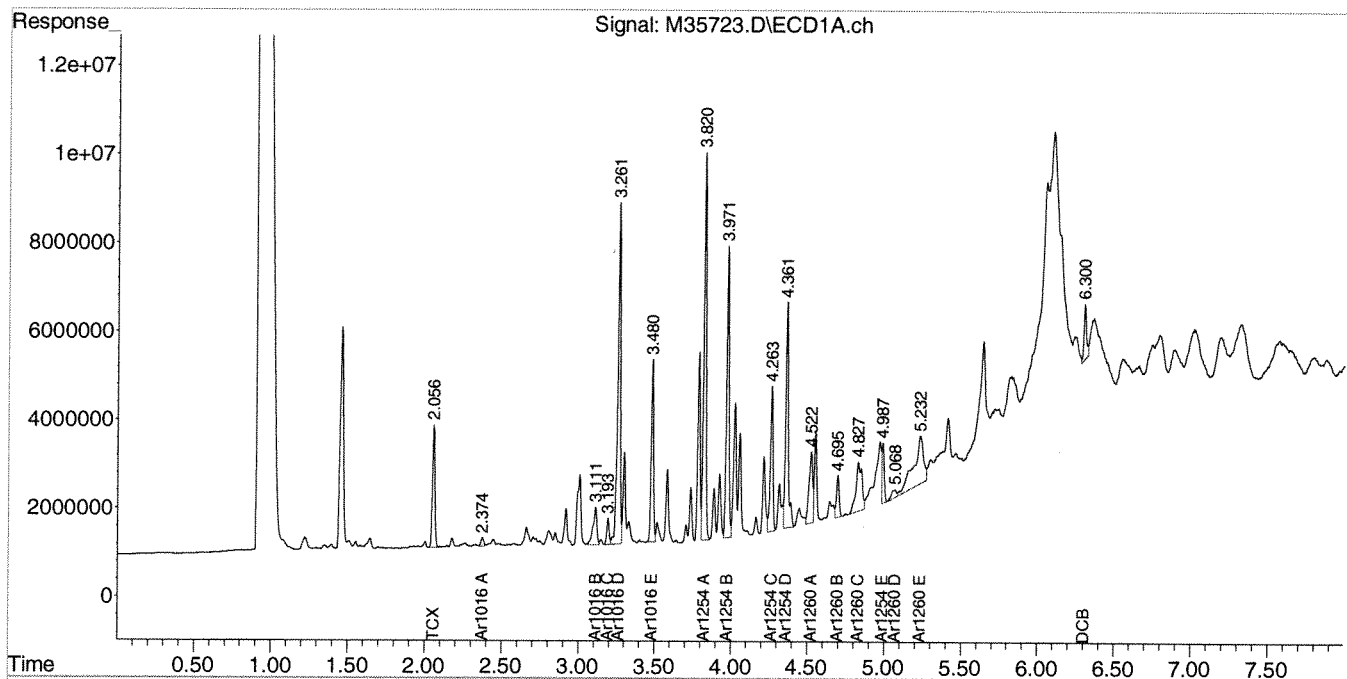
\* Values outside QC limits

Comments: \_\_\_\_\_

Data Path : C:\msdchem\1\DATA\020811-M\  
Data File : M35723.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 8 Feb 2011 2:56 pm  
Operator : JK  
Sample : 68995-5,1:5,,A/C  
Misc : SOIL  
ALS Vial : 19 Sample Multiplier: 1

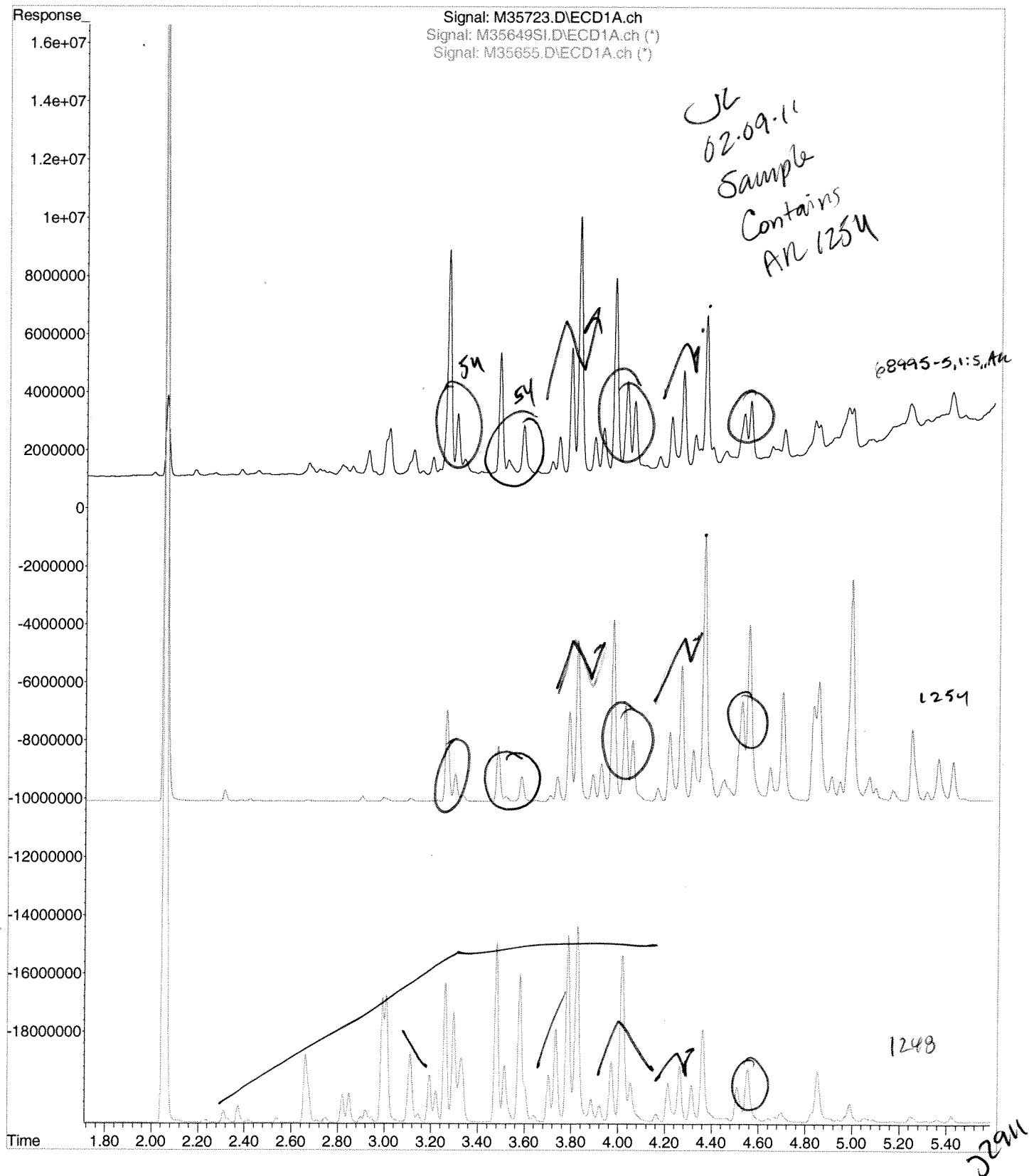
Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Feb 09 11:21:48 2011  
Quant Method : C:\msdchem\1\METHODS\PCB020711.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Mon Feb 07 15:22:15 2011  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





File :C:\msdchem\1\DATA\020811-M\M35723.D  
Operator : JK  
Acquired : 8 Feb 2011 2:56 pm using AcqMethod PEST.M  
Instrument : Instrument M  
Sample Name: 68995-5,1:5,,A/C  
Misc Info : SOIL  
Vial Number: 19



Ms. Amy Wallace  
Woodard & Curran  
35 NE Business Center Suite 180  
Andover MA 01810

February 9, 2011

**SAMPLE DATA**

**CLIENT SAMPLE ID**

**Project Name:** Peabody Terrace  
**Project Number:** 210980  
**Field Sample ID:** PTF-CBK-DC03-1139

**Lab Sample ID:** 68995-6  
**Matrix:** Solid  
**Percent Solid:** 98  
**Dilution Factor:** 49  
**Collection Date:** 01/31/11  
**Lab Receipt Date:** 02/01/11  
**Extraction Date:** 02/07/11  
**Analysis Date:** 02/08/11

**PCB ANALYTICAL RESULTS**

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	1620	U
PCB-1221	1620	U
PCB-1232	1620	U
PCB-1242	1620	U
PCB-1248	1620	<b>18900</b>
PCB-1254	1620	<b>15300</b>
PCB-1260	1620	U
PCB-1262	1620	U
PCB-1268	1620	U
<b><u>Surrogate Standard Recovery</u></b>		
2,4,5,6-Tetrachloro-m-xylene	74	%
Decachlorobiphenyl	62	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB  
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 68995
GC Column #1: STX-CLPesticides I	Sample: 68995-6,1:5,,A/C
Column ID: 0.25 mm	Data File: M35724.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 49.0
Column ID: 0.25 mm	

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	15333	13755	10.8	
PCB 1248	18038	18912	4.7	

# Column to be used to flag RPD values greater than QC limit of 40%

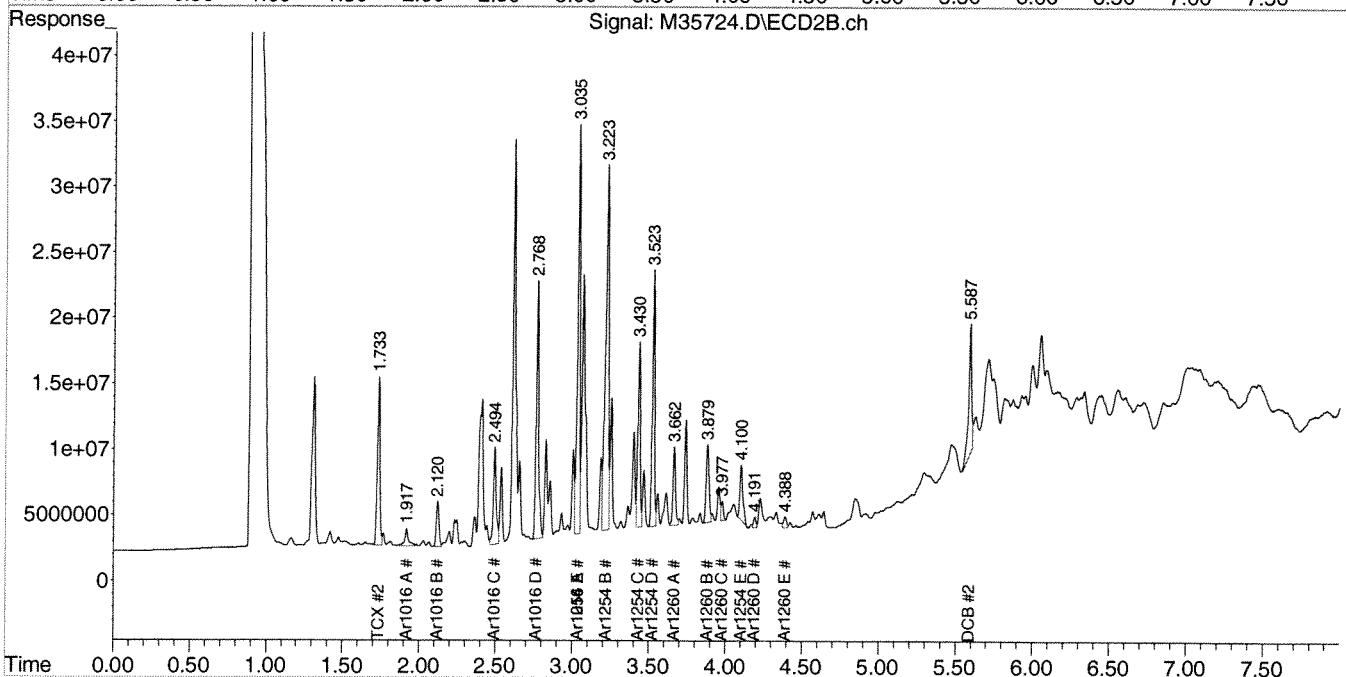
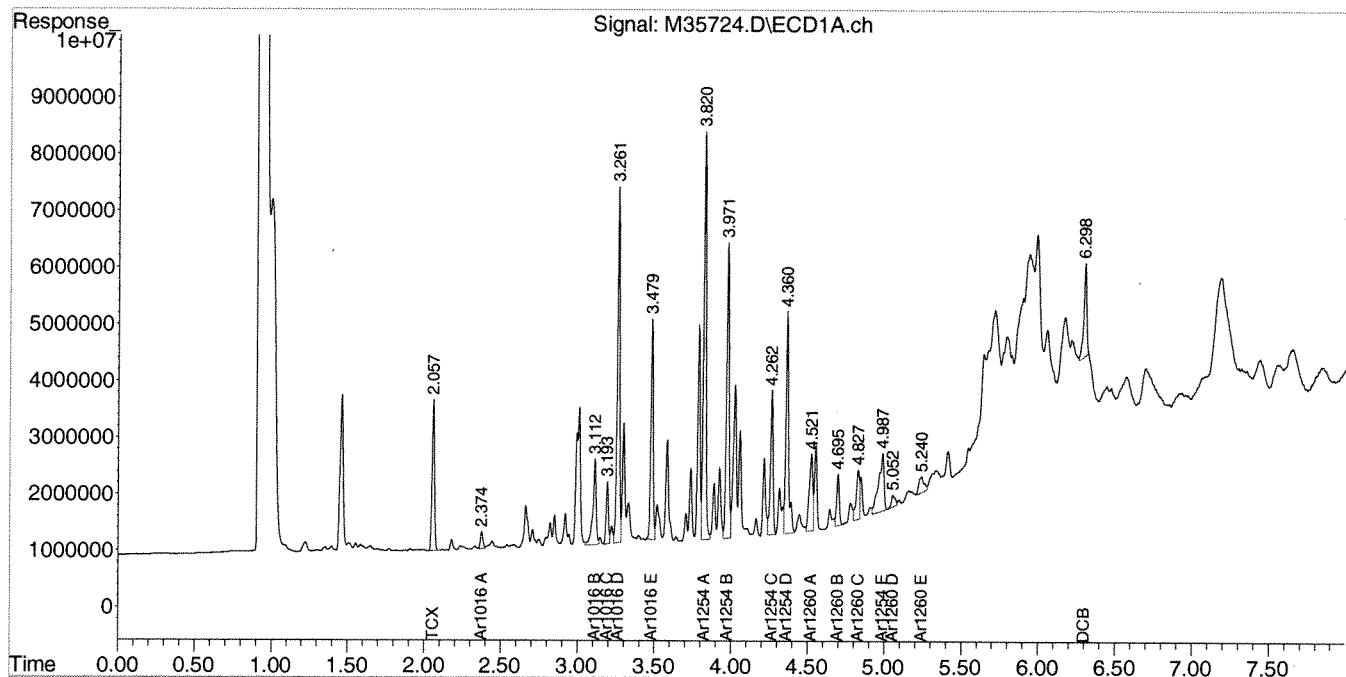
\* Values outside QC limits

Comments: \_\_\_\_\_

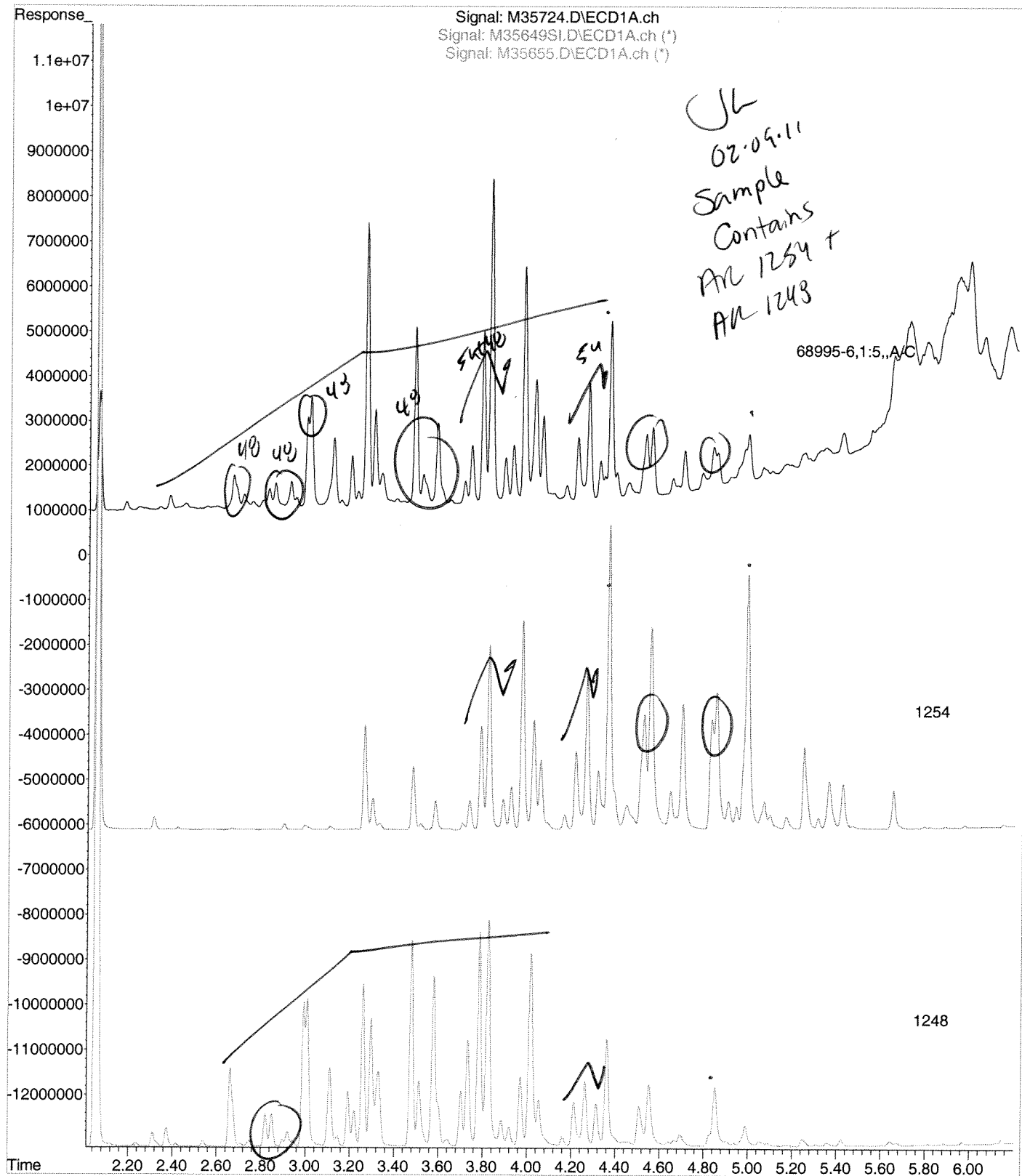
Data Path : C:\msdchem\1\DATA\020811-M\  
Data File : M35724.D  
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch  
Acq On : 8 Feb 2011 3:07 pm  
Operator : JK  
Sample : 68995-6,1:5,,A/C  
Misc : SOIL  
ALS Vial : 20 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Feb 09 11:38:33 2011  
Quant Method : C:\msdchem\1\METHODS\PCB020711.M  
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254  
QLast Update : Mon Feb 07 15:22:15 2011  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 2 uL  
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides  
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



File :C:\msdchem\1\DATA\020811-M\M35724.D  
Operator : JK  
Acquired : 8 Feb 2011 3:07 pm using AcqMethod PEST.M  
Instrument : Instrument M  
Sample Name: 68995-6,1:5,,A/C  
Misc Info : SOIL  
Vial Number: 20



JK

## PCB QC FORMS

# PCB SOIL SYSTEM MONITORING COMPOUNDS SUMMARY

Instrument ID: M  
GC Column #1: STX-CLPesticides I  
Column ID: 0.25 mm  
GC Column #2: STX-CLPesticides II  
Column ID: 0.25 mm

SDG: 68995

[illegible]

	Lower Limit	Upper Limit
SMC #1 = TCX	40	130
SMC #2 = DCB	40	130

# Column to be used to flag recovery values outside of QC limits  
\* Values outside QC limits  
D System Monitoring Compound diluted out

PCB SOIL  
LABORATORY CONTROL SAMPLE/DUPLICATE  
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG: 68995

Non-spiked sample: B020711PSOX,,A/C

Spike: L020711PSOX,,A/C

Spike duplicate: LD020711PSOX,,A/C

COMPOUND	LCS SPIKE	LCSD SPIKE	LOWER	UPPER	RPD	NON-SPIKE	SPIKE		SPIKE DUP		SPIKE DUP			
	ADDED (ug/kg)	ADDED (ug/kg)	LIMIT	LIMIT	LIMIT	RESULT (ug/kg)	RESULT (ug/kg)	% REC	#	RESULT (ug/kg)	% REC	#	RPD	#
PCB 1016	200	200	65	140	30	0	221	110		221	110		0.2	
PCB 1260	200	200	60	130	30	0	192	96		198	99		3.4	
PCB 1016 #2	200	200	65	140	30	0	212	106		230	115		8.0	
PCB 1260 #2	200	200	60	130	30	0	206	103		207	104		0.7	

# Column to be used to flag recovery and RPD values outside of QC limits

\* Values outside QC limits

LCS/LCSD spike added values have been weight adjusted.

Non-spiked result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: \_\_\_\_\_  
\_\_\_\_\_



## CHAIN OF CUSTODIES

# Chain Of Custody Form

<b>analytics environmental laboratory LLC</b> 195 Commerce Way Suite E Portsmouth, NH 03801 Phone (603) 436-5111 Fax (603) 430-2151		For Analytics Use Only Rev. 5/06/18/08	
Project#: 210980 Company: Woodward & Curran Contact: Amy Wallace Address: 35 New England Business Center Suite 180 Andover, MA 01810 Phone: (978) 557-8150 PO# Quote # Sampler (Signature): <i>Jim Russell</i>		Matrix Key: C = Concrete WP = Wipe WW = Wastewater SW = Surface Water GW = Groundwater DW = Drinking Water S = Soil/Sludge O = Oil E = Extract X = Other	
Proj. Name: Peabody Terrace Matrix Key: <u>0.90</u> 1) Shipped or hand-delivered 2) Temp blank °C 3) Received in good condition Y or N 4) pH checked by: <u>N/A</u> 5) Labels checked by: <u>ju 2-7-11</u>		Relinquished By: <i>Jim Russell</i> Date: 1/31/11 Time: 3:15 Relinquished By: <i>Jim Russell</i> Date: 2/1/11 Time: 11:15 Relinquished By: <i>Jim Russell</i> Date: 2/1/11 Time: 11:15	
Station Identification	Sample Date	Sample Time	Analysis
PTE-CBK-CR01-1134	1/31/11	1815	PCBs
PTE-CBK-CR01-1135		1850	
PTE-CBK-CR01-1136		1900	
PTE-CBK-DC03-1137		2015	
PTE-CBK-DC03-1138		2020	
PTE-CBK-DC03-1139	1/31/11	2030	PCBs
Container Key P=plastic G=glass Matrix Other Methanol HCL H2SO4 HNO3 4°C Unpres			
Project Requirements: *Fee may apply Report Type: <input checked="" type="checkbox"/> MCP* <input checked="" type="checkbox"/> Level II* <input type="checkbox"/> CTRCP* <input type="checkbox"/> Level III* <input type="checkbox"/> DOD* <input type="checkbox"/> Level IV* <input type="checkbox"/> Standard State: <input checked="" type="checkbox"/> NH <input type="checkbox"/> MA <input type="checkbox"/> ME <input type="checkbox"/> CT <input type="checkbox"/> RI State Standard: (eg. S-1 or GW-1) EDD Required: <u>Y*</u> N Type: <u>GIS Key</u>			
Email Results to: a.wallace@woodwardcurran.com j.wallace@woodwardcurran.com		Comments / Instructions: Soxhlet/8082 Please hold samples until further notice 2-7-11 off hold per client. 2-7-11	
Turnaround Time (TAT) <input type="checkbox"/> 24hr* <input checked="" type="checkbox"/> 48hr* <input type="checkbox"/> 5 Days* <input type="checkbox"/> 72hr* <input type="checkbox"/> 10 Days		*Fee may apply; lab approval required Analytics\AEL Documents\AEL COC	

ANALYTICS SAMPLE RECEIPT CHECKLIST

AEL LAB#: 68995  
 CLIENT: Woodard + Curran  
 PROJECT: Peabody Terrace

COOLER NUMBER: 54  
 NUMBER OF COOLERS: 1  
 DATE RECEIVED: 2/1/11

**A: PRELIMINARY EXAMINATION:**

DATE COOLER OPENED: 2/1/11  
 Date Received: 2/1/11

1. Cooler received by(initials): CP + JG
2. Circle one: Hand delivered  
 (If so, skip 3)
3. Did cooler come with a shipping slip? Y N/A
- 3a. Enter carrier name and airbill number here: N/A

4. Were custody seals on the outside of cooler?  
 How many & where: — Seal Date: — Seal Name: — Y N

5. Did the custody seals arrive unbroken and intact upon arrival? Y N/A

6. COC#: N/A

7. Were Custody papers filled out properly (ink, signed, etc)? Y N - no time

8. Were custody papers sealed in a plastic bag? Y N

9. Did you sign the COC in the appropriate place? Y N

10. Was the project identifiable from the COC papers? Y N

11. Was enough ice used to chill the cooler? Y N Temp. of cooler: 0.9°

**B. Log-In:** Date samples were logged in: 2.7.11 By: imt

12. Type of packing in cooler bubble wrap popcorn) Y N
13. Were all bottles sealed in separate plastic bags? Y N
14. Did all bottles arrive unbroken and were labels in good condition? Y N
15. Were all bottle labels complete(ID, Date, time, etc.) Y N
16. Did all bottle labels agree with custody papers? Y N
17. Were the correct containers used for the tests indicated: Y N
18. Were samples received at the correct pH? Y N/A
19. Was sufficient amount of sample sent for the tests indicated? Y N
20. Were all samples submitted within holding time? Y N
21. Were bubbles absent in VOA samples? Y N/A

If NO, List Sample ID's and Lab #s: \_\_\_\_\_

22. Laboratory labeling verified by (initials): su Date: 2.7.11



## ANALYTICAL REPORT

Lab Number: L1015311

Client: Woodard & Curran  
35 New England Business Center  
Suite 180  
Andover, MA 01810

ATTN: Amy Wallace

Phone: (978) 557-8150

Project Name: PEABODY TERRACE

Project Number: 210980

Report Date: 10/07/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1015311  
**Report Date:** 10/07/10

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1015311-01	PTY-CAR-241604-0814	CAMBRIDGE, MA	09/28/10 12:16
L1015311-02	PTE-CAR-W-0815	CAMBRIDGE, MA	09/28/10 12:42
L1015311-03	PTE-CAR-2532-0827	CAMBRIDGE, MA	09/28/10 13:51
L1015311-04	PTF-CAR-24517-0839	CAMBRIDGE, MA	09/28/10 15:33

**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1015311  
**Report Date:** 10/07/10

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

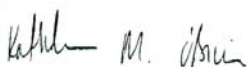
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### PCB Homologs by GC/MS-SIM

The WG435540-2 LCS recoveries, associated with L1015311-01 through -04, were above the acceptance criteria for Cl1-BZ#3 (149%), Cl2-BZ#4/#10 (145%), Cl4-BZ#45 (144%), Cl4-BZ#43/#49 (141%), Cl5-BZ#101/#84 (145%), and Cl4-BZ#77 (144%); but within overall method allowances. The results of the original analyses are reported; however, all results are considered to have a potentially high bias for the respective chlorination groups.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Kathleen O'Brien

Title: Technical Director/Representative

Date: 10/07/10

# ORGANICS

# SEMIVOLATILES



**Project Name:** PEABODY TERRACE**Lab Number:** L1015311**Project Number:** 210980**Report Date:** 10/07/10**SAMPLE RESULTS**

**Lab ID:** L1015311-01  
**Client ID:** PTY-CAR-241604-0814  
**Sample Location:** CAMBRIDGE, MA  
**Matrix:** Air Cartridge  
**Analytical Method:** 1,8270C-SIM  
**Analytical Date:** 10/06/10 22:52  
**Analyst:** JS

**Date Collected:** 09/28/10 12:16  
**Date Received:** 09/29/10  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 10/04/10 11:25  
**Cleanup Method1:** - - - -  
 - - - -  
**Cleanup Method2:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Homologs by GC/MS-SIM - Mansfield Lab						
Monochlorobiphenyls	ND		ng/cart	5.00	2.50	2
Dichlorobiphenyls	ND		ng/cart	5.00	2.50	2
Trichlorobiphenyls	ND		ng/cart	5.00	2.50	2
Tetrachlorobiphenyls	14.3		ng/cart	5.00	2.50	2
Pentachlorobiphenyls	19.9		ng/cart	5.00	2.50	2
Hexachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Heptachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Octachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Nonachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Decachlorobiphenyl	ND		ng/cart	5.00	2.50	2
Total Homologs	34.2		ng/cart	5.00	2.50	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Cl3-BZ#19-C13	120		50-125
Cl8-BZ#202-C13	113		50-125

**Project Name:** PEABODY TERRACE**Lab Number:** L1015311**Project Number:** 210980**Report Date:** 10/07/10**SAMPLE RESULTS**

**Lab ID:** L1015311-02  
**Client ID:** PTE-CAR-W-0815  
**Sample Location:** CAMBRIDGE, MA  
**Matrix:** Air Cartridge  
**Analytical Method:** 1,8270C-SIM  
**Analytical Date:** 10/06/10 23:48  
**Analyst:** JS

**Date Collected:** 09/28/10 12:42  
**Date Received:** 09/29/10  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 10/04/10 11:25  
**Cleanup Method1:** - - - -  
 - - - -  
**Cleanup Method2:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Homologs by GC/MS-SIM - Mansfield Lab						
Monochlorobiphenyls	ND		ng/cart	5.00	2.50	2
Dichlorobiphenyls	ND		ng/cart	5.00	2.50	2
Trichlorobiphenyls	ND		ng/cart	5.00	2.50	2
Tetrachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Pentachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Hexachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Heptachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Octachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Nonachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Decachlorobiphenyl	ND		ng/cart	5.00	2.50	2
Total Homologs	ND		ng/cart	5.00	2.50	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Cl3-BZ#19-C13	109		50-125
Cl8-BZ#202-C13	101		50-125

**Project Name:** PEABODY TERRACE**Lab Number:** L1015311**Project Number:** 210980**Report Date:** 10/07/10**SAMPLE RESULTS**

**Lab ID:** L1015311-03  
**Client ID:** PTE-CAR-2532-0827  
**Sample Location:** CAMBRIDGE, MA  
**Matrix:** Air Cartridge  
**Analytical Method:** 1,8270C-SIM  
**Analytical Date:** 10/07/10 00:45  
**Analyst:** JS

**Date Collected:** 09/28/10 13:51  
**Date Received:** 09/29/10  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 10/04/10 11:25  
**Cleanup Method1:** - - - -  
 - - - -  
**Cleanup Method2:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Homologs by GC/MS-SIM - Mansfield Lab						
Monochlorobiphenyls	ND		ng/cart	5.00	2.50	2
Dichlorobiphenyls	ND		ng/cart	5.00	2.50	2
Trichlorobiphenyls	7.20		ng/cart	5.00	2.50	2
Tetrachlorobiphenyls	23.2		ng/cart	5.00	2.50	2
Pentachlorobiphenyls	55.8		ng/cart	5.00	2.50	2
Hexachlorobiphenyls	10.5		ng/cart	5.00	2.50	2
Heptachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Octachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Nonachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Decachlorobiphenyl	ND		ng/cart	5.00	2.50	2
Total Homologs	96.7		ng/cart	5.00	2.50	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Cl3-BZ#19-C13	82		50-125
Cl8-BZ#202-C13	80		50-125

**Project Name:** PEABODY TERRACE**Lab Number:** L1015311**Project Number:** 210980**Report Date:** 10/07/10**SAMPLE RESULTS**

**Lab ID:** L1015311-04  
**Client ID:** PTF-CAR-24517-0839  
**Sample Location:** CAMBRIDGE, MA  
**Matrix:** Air Cartridge  
**Analytical Method:** 1,8270C-SIM  
**Analytical Date:** 10/07/10 01:41  
**Analyst:** JS

**Date Collected:** 09/28/10 15:33  
**Date Received:** 09/29/10  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 10/04/10 11:25  
**Cleanup Method1:** - - - -  
 - - - -  
**Cleanup Method2:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Homologs by GC/MS-SIM - Mansfield Lab						
Monochlorobiphenyls	ND		ng/cart	5.00	2.50	2
Dichlorobiphenyls	ND		ng/cart	5.00	2.50	2
Trichlorobiphenyls	ND		ng/cart	5.00	2.50	2
Tetrachlorobiphenyls	13.5		ng/cart	5.00	2.50	2
Pentachlorobiphenyls	19.7		ng/cart	5.00	2.50	2
Hexachlorobiphenyls	8.10		ng/cart	5.00	2.50	2
Heptachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Octachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Nonachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Decachlorobiphenyl	ND		ng/cart	5.00	2.50	2
Total Homologs	41.3		ng/cart	5.00	2.50	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Cl3-BZ#19-C13	117		50-125
Cl8-BZ#202-C13	108		50-125

Project Name: PEABODY TERRACE

Lab Number: L1015311

Project Number: 210980

Report Date: 10/07/10

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270C-SIM  
 Analytical Date: 10/06/10 06:47  
 Analyst: JS

Extraction Method: EPA 3540C  
 Extraction Date: 10/04/10 11:25  
 Cleanup Method1: - - - -  
 Cleanup Date1:  
 Cleanup Method2: - - - -  
 Cleanup Date2:

Parameter	Result	Qualifier	Units	RL	MDL
PCB Homologs by GC/MS-SIM - Mansfield Lab for sample(s): 01-04 Batch: WG435540-1					
Monochlorobiphenyls	ND		ng/cart	5.00	2.50
Dichlorobiphenyls	ND		ng/cart	5.00	2.50
Trichlorobiphenyls	ND		ng/cart	5.00	2.50
Tetrachlorobiphenyls	ND		ng/cart	5.00	2.50
Pentachlorobiphenyls	ND		ng/cart	5.00	2.50
Hexachlorobiphenyls	ND		ng/cart	5.00	2.50
Heptachlorobiphenyls	ND		ng/cart	5.00	2.50
Octachlorobiphenyls	ND		ng/cart	5.00	2.50
Nonachlorobiphenyls	ND		ng/cart	5.00	2.50
Decachlorobiphenyl	ND		ng/cart	5.00	2.50
Total Homologs	ND		ng/cart	5.00	2.50

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Cl3-BZ#19-C13	94		50-125
Cl8-BZ#202-C13	90		50-125

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** PEABODY TERRACE

**Lab Number:** L1015311

**Project Number:** 210980

**Report Date:** 10/07/10

Parameter	LCS %Recovery	Qual	LCS %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-04 Batch: WG435540-2								
Cl1-BZ#1	129		-		40-140	-		30
Cl1-BZ#3	149	Q	-		40-140	-		30
Cl2-BZ#4/#10	145	Q	-		40-140	-		30
Cl2-BZ#5/#8	129		-		40-140	-		30
Cl3-BZ#19	125		-		40-140	-		30
Cl3-BZ#18	120		-		40-140	-		30
Cl2-BZ#15	120		-		40-140	-		30
Cl4-BZ#54	127		-		40-140	-		30
Cl3-BZ#29	124		-		40-140	-		30
Cl4-BZ#50	136		-		40-140	-		30
Cl3-BZ#28/#31	134		-		40-140	-		30
Cl4-BZ#45	144	Q	-		40-140	-		30
Cl4-BZ#52	129		-		40-140	-		30
Cl4-BZ#43/#49	141	Q	-		40-140	-		30
Cl4-Bz#47/#48	134		-		40-140	-		30
Cl5-BZ#104	125		-		40-140	-		30
Cl4-BZ#44	132		-		40-140	-		30
Cl3-BZ#37	130		-		40-140	-		30
Cl4-BZ#74	136		-		40-140	-		30
Cl6-BZ#155	134		-		40-140	-		30
Cl4-BZ#70	136		-		40-140	-		30

Lab Control Sample Analysis  
Batch Quality Control

Project Name: PEABODY TERRACE  
Project Number: 210980

Lab Number: L1015311  
Report Date: 10/07/10

Parameter	LCS		LCSD		%Recovery		RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual	%Recovery	Limits			
PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-04 Batch: WG435540-2									
CI4-BZ#66	131		-		40-140		-		30
CI5-BZ#95	120		-		40-140		-		30
CI4-BZ#56/#60	125		-		40-140		-		30
CI5-BZ#101/#84	145	Q	-		40-140		-		30
CI5-BZ#99	134		-		40-140		-		30
CI6-BZ#154	125		-		40-140		-		30
CI5-BZ#110	125		-		40-140		-		30
CI4-BZ#81	140		-		40-140		-		30
CI6-BZ#151	122		-		40-140		-		30
CI4-BZ#77	144	Q	-		40-140		-		30
CI5-BZ#123	130		-		40-140		-		30
CI6-BZ#149	128		-		40-140		-		30
CI7-BZ#188	119		-		40-140		-		30
CI5-BZ#118	137		-		40-140		-		30
CI6-BZ#146	134		-		40-140		-		30
CI5-BZ#114	140		-		40-140		-		30
CI6-BZ#153	124		-		40-140		-		30
CI6-BZ#138/#163	109		-		40-140		-		30
CI6-BZ#158	129		-		40-140		-		30
CI5-BZ#105	122		-		40-140		-		30
CI7-BZ#182/#187	126		-		40-140		-		30



Lab Control Sample Analysis  
Batch Quality Control

Project Name: PEABODY TERRACE  
Project Number: 210980

Lab Number: L1015311  
Report Date: 10/07/10

Parameter	LCS		LCSD		%Recovery		RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual	%Recovery	Limits			
PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-04 Batch: WG435540-2									
CI7-BZ#183	128	-	-	-	40-140	-	-	-	30
CI6-BZ#167/#128	128	-	-	-	40-140	-	-	-	30
CI5-BZ#126	104	-	-	-	40-140	-	-	-	30
CI7-BZ#174	129	-	-	-	40-140	-	-	-	30
CI8-BZ#202	122	-	-	-	40-140	-	-	-	30
CI7-BZ#177	122	-	-	-	40-140	-	-	-	30
CI6-BZ#156	123	-	-	-	40-140	-	-	-	30
CI6-BZ#157	120	-	-	-	40-140	-	-	-	30
CI7-BZ#180	118	-	-	-	40-140	-	-	-	30
CI7-BZ#170/#190	101	-	-	-	40-140	-	-	-	30
CI8-BZ#201	121	-	-	-	40-140	-	-	-	30
CI6-BZ#169	133	-	-	-	40-140	-	-	-	30
CI9-BZ#208	120	-	-	-	40-140	-	-	-	30
CI7-BZ#189	133	-	-	-	40-140	-	-	-	30
CI8-BZ#195	121	-	-	-	40-140	-	-	-	30
CI8-BZ#194	126	-	-	-	40-140	-	-	-	30
CI8-BZ#205	128	-	-	-	40-140	-	-	-	30
CI9-BZ#206	113	-	-	-	40-140	-	-	-	30
CI10-BZ#209	112	-	-	-	40-140	-	-	-	30





Lab Control Sample Analysis  
Batch Quality Control

Project Name: PEABODY TERRACE  
Project Number: 210980

Lab Number: L1015311  
Report Date: 10/07/10

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-04 Batch: WG435540-2								
Surrogate	LCS		LCSD		Acceptance Criteria			
	%Recovery	Qual	%Recovery	Qual				
C13-BZ#19-C13		111						50-125
C18-BZ#202-C13		109						50-125



**Project Name:** PEABODY TERRACE**Lab Number:** L1015311**Project Number:** 210980**Report Date:** 10/07/10**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

**Cooler Information Custody Seal****Cooler**

A Absent

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1015311-01A	PUF Air Cartridge - High or Low	A	N/A	5	Y	Absent	A2-PCBHOMS-8270SIM(7)
L1015311-02A	PUF Air Cartridge - High or Low	A	N/A	5	Y	Absent	A2-PCBHOMS-8270SIM(7)
L1015311-03A	PUF Air Cartridge - High or Low	A	N/A	5	Y	Absent	A2-PCBHOMS-8270SIM(7)
L1015311-04A	PUF Air Cartridge - High or Low	A	N/A	5	Y	Absent	A2-PCBHOMS-8270SIM(7)

\*Values in parentheses indicate holding time in days

**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1015311  
**Report Date:** 10/07/10

## GLOSSARY

### *Acronyms*

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

### *Terms*

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### *Data Qualifiers*

<b>A</b>	- Spectra identified as "Aldol Condensation Product".
<b>B</b>	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
<b>D</b>	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
<b>E</b>	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
<b>H</b>	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
<b>I</b>	- The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
<b>P</b>	- The RPD between the results for the two columns exceeds the method-specified criteria.
<b>Q</b>	- The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
<b>R</b>	- Analytical results are from sample re-analysis.

*Report Format:* DU "J" Qualify to 1/2 the RDL



**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1015311  
**Report Date:** 10/07/10

***Data Qualifiers***

- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above one half the RL.  
This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at one half the reporting limit (RL) for the sample.

*Report Format:* DU "J" Qualify to 1/2 the RDL

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**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1015311  
**Report Date:** 10/07/10

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised July 19, 2010 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

### **Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.**

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. **NELAP Accredited via LA-DEQ.**

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX. **NELAP Accredited.**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3051, 6020, 747A, 7474, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

*Air & Emissions* (EPA TO-15.)

**Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl.







## ANALYTICAL REPORT

Lab Number: L1016678

Client: Woodard & Curran  
35 New England Business Center  
Suite 180  
Andover, MA 01810

ATTN: Jeff Hamel

Phone: (978) 557-8150

Project Name: PEABODY TERRACE

Project Number: 210980

Report Date: 11/02/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1016678  
**Report Date:** 11/02/10

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1016678-01	PTE-CAR-2722-0977	CAMBRIDGE, MA	10/21/10 11:35
L1016678-02	PTE-CAR-24417-0978	CAMBRIDGE, MA	10/21/10 14:01

**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1016678  
**Report Date:** 11/02/10

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

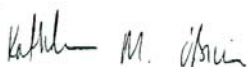
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### PCB Homologs

L1016678-01 and -02 as well as the associated QC samples were analyzed at a dilution due to the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Kathleen O'Brien

Title: Technical Director/Representative

Date: 11/02/10

# ORGANICS

# SEMIVOLATILES

**Project Name:** PEABODY TERRACE**Lab Number:** L1016678**Project Number:** 210980**Report Date:** 11/02/10**SAMPLE RESULTS**

**Lab ID:** L1016678-01  
**Client ID:** PTE-CAR-2722-0977  
**Sample Location:** CAMBRIDGE, MA  
**Matrix:** Air Cartridge  
**Analytical Method:** 1,8270C-SIM  
**Analytical Date:** 10/27/10 23:42  
**Analyst:** JS

**Date Collected:** 10/21/10 11:35  
**Date Received:** 10/21/10  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 10/25/10 11:23  
**Cleanup Method1:** - - - -  
 - - - -  
**Cleanup Method2:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Homologs by GC/MS-SIM - Mansfield Lab						
Monochlorobiphenyls	ND		ng/cart	5.00	2.50	2
Dichlorobiphenyls	ND		ng/cart	5.00	2.50	2
Trichlorobiphenyls	ND		ng/cart	5.00	2.50	2
Tetrachlorobiphenyls	12.4		ng/cart	5.00	2.50	2
Pentachlorobiphenyls	12.2		ng/cart	5.00	2.50	2
Hexachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Heptachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Octachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Nonachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Decachlorobiphenyl	ND		ng/cart	5.00	2.50	2
Total Homologs	24.6		ng/cart	5.00	2.50	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Cl3-BZ#19-C13	92		50-125
Cl8-BZ#202-C13	92		50-125

**Project Name:** PEABODY TERRACE**Lab Number:** L1016678**Project Number:** 210980**Report Date:** 11/02/10**SAMPLE RESULTS**

**Lab ID:** L1016678-02  
**Client ID:** PTE-CAR-24417-0978  
**Sample Location:** CAMBRIDGE, MA  
**Matrix:** Air Cartridge  
**Analytical Method:** 1,8270C-SIM  
**Analytical Date:** 10/28/10 00:38  
**Analyst:** JS

**Date Collected:** 10/21/10 14:01  
**Date Received:** 10/21/10  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 10/25/10 11:23  
**Cleanup Method1:** - - - -  
 - - - -  
**Cleanup Method2:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Homologs by GC/MS-SIM - Mansfield Lab						
Monochlorobiphenyls	ND		ng/cart	5.00	2.50	2
Dichlorobiphenyls	ND		ng/cart	5.00	2.50	2
Trichlorobiphenyls	ND		ng/cart	5.00	2.50	2
Tetrachlorobiphenyls	8.70		ng/cart	5.00	2.50	2
Pentachlorobiphenyls	6.50		ng/cart	5.00	2.50	2
Hexachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Heptachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Octachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Nonachlorobiphenyls	ND		ng/cart	5.00	2.50	2
Decachlorobiphenyl	ND		ng/cart	5.00	2.50	2
Total Homologs	15.2		ng/cart	5.00	2.50	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Cl3-BZ#19-C13	92		50-125
Cl8-BZ#202-C13	89		50-125

Project Name: PEABODY TERRACE

Lab Number: L1016678

Project Number: 210980

Report Date: 11/02/10

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270C-SIM  
 Analytical Date: 10/27/10 11:27  
 Analyst: JS

Extraction Method: EPA 3540C  
 Extraction Date: 10/25/10 11:23  
 Cleanup Method1: - - - -  
 Cleanup Date1:  
 Cleanup Method2: - - - -  
 Cleanup Date2:

Parameter	Result	Qualifier	Units	RL	MDL
PCB Homologs by GC/MS-SIM - Mansfield Lab for sample(s): 01-02 Batch: WG439175-1					
Monochlorobiphenyls	ND		ng/cart	5.00	2.50
Dichlorobiphenyls	ND		ng/cart	5.00	2.50
Trichlorobiphenyls	ND		ng/cart	5.00	2.50
Tetrachlorobiphenyls	ND		ng/cart	5.00	2.50
Pentachlorobiphenyls	ND		ng/cart	5.00	2.50
Hexachlorobiphenyls	ND		ng/cart	5.00	2.50
Heptachlorobiphenyls	ND		ng/cart	5.00	2.50
Octachlorobiphenyls	ND		ng/cart	5.00	2.50
Nonachlorobiphenyls	ND		ng/cart	5.00	2.50
Decachlorobiphenyl	ND		ng/cart	5.00	2.50
Total Homologs	ND		ng/cart	5.00	2.50

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Cl3-BZ#19-C13	85		50-125
Cl8-BZ#202-C13	85		50-125



## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** PEABODY TERRACE

**Lab Number:** L1016678

**Project Number:** 210980

**Report Date:** 11/02/10

Parameter	LCS		LCSD		%Recovery		RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual	%Recovery	Limits			

PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-02 Batch: WG439175-2

Cl1-BZ#1	83	-	-	-	40-140	-	-	30
CL1-BZ#3	84	-	-	-	40-140	-	-	30
Cl2-BZ#4/#10	94	-	-	-	40-140	-	-	30
Cl2-BZ#5/#8	81	-	-	-	40-140	-	-	30
Cl3-BZ#19	86	-	-	-	40-140	-	-	30
Cl3-BZ#18	79	-	-	-	40-140	-	-	30
Cl2-BZ#15	75	-	-	-	40-140	-	-	30
Cl4-BZ#54	87	-	-	-	40-140	-	-	30
Cl3-BZ#29	76	-	-	-	40-140	-	-	30
Cl4-BZ#50	95	-	-	-	40-140	-	-	30
Cl3-BZ#28/#31	83	-	-	-	40-140	-	-	30
Cl4-BZ#45	99	-	-	-	40-140	-	-	30
Cl4-BZ#52	88	-	-	-	40-140	-	-	30
Cl4-BZ#43/#49	93	-	-	-	40-140	-	-	30
Cl4-Bz#47/#48	87	-	-	-	40-140	-	-	30
Cl5-BZ#104	88	-	-	-	40-140	-	-	30
Cl4-BZ#44	87	-	-	-	40-140	-	-	30
Cl3-BZ#37	70	-	-	-	40-140	-	-	30
Cl4-BZ#74	83	-	-	-	40-140	-	-	30
Cl6-BZ#155	94	-	-	-	40-140	-	-	30
Cl4-BZ#70	82	-	-	-	40-140	-	-	30

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1016678  
**Report Date:** 11/02/10

Parameter	LCS		LCSD		%Recovery		RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual	%Recovery	Limits			
PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-02 Batch: WG439175-2									
Cl4-BZ#66	84		-		40-140		-		30
Cl5-BZ#95	78		-		40-140		-		30
Cl4-BZ#56/#60	79		-		40-140		-		30
Cl5-BZ#101/#84	94		-		40-140		-		30
Cl5-BZ#99	86		-		40-140		-		30
Cl6-BZ#154	85		-		40-140		-		30
Cl5-BZ#110	78		-		40-140		-		30
Cl4-BZ#81	78		-		40-140		-		30
Cl6-BZ#151	83		-		40-140		-		30
Cl4-BZ#77	77		-		40-140		-		30
Cl5-BZ#123	81		-		40-140		-		30
Cl6-BZ#149	84		-		40-140		-		30
Cl7-BZ#188	82		-		40-140		-		30
Cl5-BZ#118	81		-		40-140		-		30
Cl6-BZ#146	80		-		40-140		-		30
Cl5-BZ#114	83		-		40-140		-		30
Cl6-BZ#153	80		-		40-140		-		30
Cl6-BZ#138/#163	71		-		40-140		-		30
Cl6-BZ#158	84		-		40-140		-		30
Cl5-BZ#105	71		-		40-140		-		30
Cl7-BZ#182/#187	89		-		40-140		-		30



Lab Control Sample Analysis  
Batch Quality Control

Project Name: PEABODY TERRACE  
Project Number: 210980

Lab Number: L1016678  
Report Date: 11/02/10

Parameter	LCS		LCSD		%Recovery		RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual	%Recovery	Limits			
PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-02 Batch: WG439175-2									
C17-BZ#183	94		-		40-140	-			30
C16-BZ#167/#128	82		-		40-140	-			30
C15-BZ#126	56		-		40-140	-			30
C17-BZ#174	94		-		40-140	-			30
C18-BZ#202	99		-		40-140	-			30
C17-BZ#177	90		-		40-140	-			30
C16-BZ#156	77		-		40-140	-			30
C16-BZ#157	79		-		40-140	-			30
C17-BZ#180	88		-		40-140	-			30
C17-BZ#170/#190	72		-		40-140	-			30
C18-BZ#201	94		-		40-140	-			30
C16-BZ#169	78		-		40-140	-			30
C19-BZ#208	102		-		40-140	-			30
C17-BZ#189	84		-		40-140	-			30
C18-BZ#195	87		-		40-140	-			30
C18-BZ#194	90		-		40-140	-			30
C18-BZ#205	88		-		40-140	-			30
C19-BZ#206	94		-		40-140	-			30
C110-BZ#209	93		-		40-140	-			30



**Lab Control Sample Analysis**  
Batch Quality Control

**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1016678  
**Report Date:** 11/02/10

Parameter	LCS		LCSD		%Recovery Limits		RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual	%Recovery	Limits			
PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-02 Batch: WG439175-2									
Surrogate	LCS		LCSD		Acceptance Criteria				
	%Recovery	Qual	%Recovery	Qual	%Recovery	Qual			

C13-BZ#19-C13  
C18-BZ#202-C13

87  
90

50-125  
50-125



**Project Name:** PEABODY TERRACE**Project Number:** 210980**Lab Number:** L1016678**Report Date:** 11/02/10**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Reagent H2O Preserved Vials Frozen on:** NA**Cooler Information Custody Seal****Cooler**

A

Absent

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Analysis(*)</b>
L1016678-01A	PUF Air Cartridge - High or Low	A	NA	1	Y	Absent	PUF-LO(),A2-PCBHOMS-8270SIM(7)
L1016678-02A	PUF Air Cartridge - High or Low	A	NA	1	Y	Absent	PUF-LO(),A2-PCBHOMS-8270SIM(7)

\*Values in parentheses indicate holding time in days

**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1016678  
**Report Date:** 11/02/10

## GLOSSARY

### *Acronyms*

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

### *Terms*

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### *Data Qualifiers*

<b>A</b>	- Spectra identified as "Aldol Condensation Product".
<b>B</b>	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
<b>D</b>	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
<b>E</b>	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
<b>H</b>	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
<b>I</b>	- The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
<b>P</b>	- The RPD between the results for the two columns exceeds the method-specified criteria.
<b>Q</b>	- The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
<b>R</b>	- Analytical results are from sample re-analysis.

*Report Format:* DU "J" Qualify to 1/2 the RDL



**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1016678  
**Report Date:** 11/02/10

***Data Qualifiers***

- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above one half the RL.  
This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at one half the reporting limit (RL) for the sample.

*Report Format:* DU "J" Qualify to 1/2 the RDL

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**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1016678  
**Report Date:** 11/02/10

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.





## Certificate/Approval Program Summary

Last revised July 19, 2010 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

### **Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.**

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. **NELAP Accredited via LA-DEQ.**

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX. **NELAP Accredited.**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3051, 6020, 747A, 7474, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

*Air & Emissions* (EPA TO-15.)

**Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl.





## ANALYTICAL REPORT

Lab Number:	L1101602
Client:	Woodard & Curran 35 New England Business Center Drive Suite 180 Andover, MA 01810
ATTN:	Jeff Hamel
Phone:	(978) 557-8150
Project Name:	PEABODY TERRACE
Project Number:	210980
Report Date:	02/14/11

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1101602  
**Report Date:** 02/14/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1101602-01	PTE-CAR-2532-1140	CAMBRIDGE, MA	02/04/11 14:22

**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1101602  
**Report Date:** 02/14/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

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### PCB Homologs

L1101602-01 as well as the associated QC samples were analyzed at dilution due to the sample matrix.

The WG454368-2 LCS recoveries, associated with L1101602-01, are below the individual acceptance criteria for C11-BZ#1 (36%) and C11-BZ#3 (38%), but within the overall method allowances. The results of the associated samples are reported; however, all results are considered to have a potentially low bias for these compounds.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Cynthia McQueen

Title: Technical Director/Representative

Date: 02/14/11

# ORGANICS

# SEMIVOLATILES



**Project Name:** PEABODY TERRACE**Lab Number:** L1101602**Project Number:** 210980**Report Date:** 02/14/11**SAMPLE RESULTS**

**Lab ID:** L1101602-01  
**Client ID:** PTE-CAR-2532-1140  
**Sample Location:** CAMBRIDGE, MA  
**Matrix:** Air Cartridge  
**Analytical Method:** 1,8270C-SIM  
**Analytical Date:** 02/11/11 01:42  
**Analyst:** JS

**Date Collected:** 02/04/11 14:22  
**Date Received:** 02/04/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 02/09/11 15:55  
**Cleanup Method1:** - - - -  
 - - - -  
**Cleanup Method2:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Homologs by GC/MS-SIM - Mansfield Lab						
Monochlorobiphenyls	ND		ng/cart	5.00	--	2
Dichlorobiphenyls	ND		ng/cart	5.00	--	2
Trichlorobiphenyls	ND		ng/cart	5.00	--	2
Tetrachlorobiphenyls	13.3		ng/cart	5.00	--	2
Pentachlorobiphenyls	19.1		ng/cart	5.00	--	2
Hexachlorobiphenyls	ND		ng/cart	5.00	--	2
Heptachlorobiphenyls	ND		ng/cart	5.00	--	2
Octachlorobiphenyls	ND		ng/cart	5.00	--	2
Nonachlorobiphenyls	ND		ng/cart	5.00	--	2
Decachlorobiphenyl	ND		ng/cart	5.00	--	2
Total Homologs	32.4		ng/cart	5.00	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Cl3-BZ#19-C13	105		50-125
Cl8-BZ#202-C13	78		50-125

Project Name: PEABODY TERRACE

Lab Number: L1101602

Project Number: 210980

Report Date: 02/14/11

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270C-SIM  
 Analytical Date: 02/10/11 23:48  
 Analyst: JS

Extraction Method: EPA 3540C  
 Extraction Date: 02/09/11 15:55  
 Cleanup Method1: - - - -  
 Cleanup Date1:  
 Cleanup Method2: - - - -  
 Cleanup Date2:

Parameter	Result	Qualifier	Units	RL	MDL
PCB Homologs by GC/MS-SIM - Mansfield Lab for sample(s): 01 Batch: WG454368-1					
Monochlorobiphenyls	ND		ng/cart	5.00	--
Dichlorobiphenyls	ND		ng/cart	5.00	--
Trichlorobiphenyls	ND		ng/cart	5.00	--
Tetrachlorobiphenyls	ND		ng/cart	5.00	--
Pentachlorobiphenyls	ND		ng/cart	5.00	--
Hexachlorobiphenyls	ND		ng/cart	5.00	--
Heptachlorobiphenyls	ND		ng/cart	5.00	--
Octachlorobiphenyls	ND		ng/cart	5.00	--
Nonachlorobiphenyls	ND		ng/cart	5.00	--
Decachlorobiphenyl	ND		ng/cart	5.00	--
Total Homologs	ND		ng/cart	5.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Cl3-BZ#19-C13	108		50-125
Cl8-BZ#202-C13	77		50-125

Lab Control Sample Analysis  
Batch Quality Control

Project Name: PEABODY TERRACE  
Project Number: 210980

Lab Number: L1101602  
Report Date: 02/14/11

Parameter	LCS		LCSD		%Recovery		RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual	%Recovery	Limits			
PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01 Batch: WG454368-2									
Cl1-BZ#1	36	Q	-		40-140		-		30
Cl1-BZ#3	38	Q	-		40-140		-		30
Cl2-BZ#4/#10	49		-		40-140		-		30
Cl2-BZ#5/#8	43		-		40-140		-		30
Cl3-BZ#19	52		-		40-140		-		30
Cl3-BZ#18	45		-		40-140		-		30
Cl2-BZ#15	43		-		40-140		-		30
Cl4-BZ#54	55		-		40-140		-		30
Cl3-BZ#29	44		-		40-140		-		30
Cl4-BZ#50	57		-		40-140		-		30
Cl3-BZ#28/#31	47		-		40-140		-		30
Cl4-BZ#45	60		-		40-140		-		30
Cl4-BZ#52	55		-		40-140		-		30
Cl4-BZ#43/#49	57		-		40-140		-		30
Cl4-Bz#47/#48	53		-		40-140		-		30
Cl5-BZ#104	57		-		40-140		-		30
Cl4-BZ#44	56		-		40-140		-		30
Cl3-BZ#37	40		-		40-140		-		30
Cl4-BZ#74	52		-		40-140		-		30
Cl6-BZ#155	65		-		40-140		-		30
Cl4-BZ#70	52		-		40-140		-		30



## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** PEABODY TERRACE

**Lab Number:** L1101602

**Project Number:** 210980

**Report Date:** 02/14/11

Parameter	LCS		LCSD		%Recovery		RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual	%Recovery	Limits			
PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01 Batch: WG454368-2									
Cl4-BZ#66	54		-		40-140		-		30
Cl5-BZ#95	55		-		40-140		-		30
Cl4-BZ#56/#60	52		-		40-140		-		30
Cl5-BZ#101/#84	66		-		40-140		-		30
Cl5-BZ#99	60		-		40-140		-		30
Cl6-BZ#154	63		-		40-140		-		30
Cl5-BZ#110	57		-		40-140		-		30
Cl4-BZ#81	49		-		40-140		-		30
Cl6-BZ#151	62		-		40-140		-		30
Cl4-BZ#77	48		-		40-140		-		30
Cl5-BZ#123	56		-		40-140		-		30
Cl6-BZ#149	66		-		40-140		-		30
Cl7-BZ#188	62		-		40-140		-		30
Cl5-BZ#118	59		-		40-140		-		30
Cl6-BZ#146	68		-		40-140		-		30
Cl5-BZ#114	61		-		40-140		-		30
Cl6-BZ#153	62		-		40-140		-		30
Cl6-BZ#138/#163	55		-		40-140		-		30
Cl6-BZ#158	64		-		40-140		-		30
Cl5-BZ#105	55		-		40-140		-		30
Cl7-BZ#182/#187	66		-		40-140		-		30

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** PEABODY TERRACE  
**Project Number:** 210980

**Lab Number:** L1101602  
**Report Date:** 02/14/11

Parameter	LCS		LCSD		%Recovery		RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual	%Recovery	Limits			
PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01 Batch: WG454368-2									
CI7-BZ#183	67		-		40-140		-		30
CI6-BZ#167/#128	62		-		40-140		-		30
CI5-BZ#126	40		-		40-140		-		30
CI7-BZ#174	70		-		40-140		-		30
CI8-BZ#202	72		-		40-140		-		30
CI7-BZ#177	66		-		40-140		-		30
CI6-BZ#156	57		-		40-140		-		30
CI6-BZ#157	60		-		40-140		-		30
CI7-BZ#180	71		-		40-140		-		30
CI7-BZ#170/#190	55		-		40-140		-		30
CI8-BZ#201	69		-		40-140		-		30
CI6-BZ#169	50		-		40-140		-		30
CI9-BZ#208	75		-		40-140		-		30
CI7-BZ#189	63		-		40-140		-		30
CI8-BZ#195	70		-		40-140		-		30
CI8-BZ#194	69		-		40-140		-		30
CI8-BZ#205	70		-		40-140		-		30
CI9-BZ#206	72		-		40-140		-		30
CI10-BZ#209	74		-		40-140		-		30



Lab Control Sample Analysis  
Batch Quality Control

Project Name: PEABODY TERRACE  
Project Number: 210980

Lab Number: L1101602  
Report Date: 02/14/11

Parameter	LCS		LCSD		%Recovery		RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual	%Recovery	Limits			
PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01 Batch: WG454368-2									
Surrogate	LCS		LCSD		Acceptance				
	%Recovery	Qual	%Recovery	Qual	%Recovery	Criteria			
C13-BZ#19-C13	50					50-125			
C18-BZ#202-C13	57					50-125			



**Project Name:** PEABODY TERRACE**Project Number:** 210980**Lab Number:** L1101602**Report Date:** 02/14/11**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** NA**Cooler Information Custody Seal****Cooler**

A Absent

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1101602-01A	PUF Air Cartridge - High or Low	A	N/A	2.1	NA	Absent	PUF-LO(),A2-PCBHOMS-8270SIM(7)

\*Values in parentheses indicate holding time in days

**Project Name:** PEABODY TERRACE  
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**Report Date:** 02/14/11

## GLOSSARY

### *Acronyms*

EPA	· Environmental Protection Agency.
LCS	· Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	· Laboratory Control Sample Duplicate: Refer to LCS.
MDL	· Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	· Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	· Matrix Spike Sample Duplicate: Refer to MS.
NA	· Not Applicable.
NC	· Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	· Not Ignitable.
RL	· Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	· Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

### *Terms*

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### *Data Qualifiers*

<b>A</b>	· Spectra identified as "Aldol Condensation Product".
<b>B</b>	· The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
<b>D</b>	· Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
<b>E</b>	· Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
<b>G</b>	· The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
<b>H</b>	· The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
<b>I</b>	· The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
<b>P</b>	· The RPD between the results for the two columns exceeds the method-specified criteria.
<b>Q</b>	· The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when

*Report Format:* Data Usability Report





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***Data Qualifiers***

the sample concentrations are less than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** PEABODY TERRACE  
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**Lab Number:** L1101602  
**Report Date:** 02/14/11

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised July 19, 2010 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

### **Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.**

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. **NELAP Accredited via LA-DEQ.**

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX. **NELAP Accredited.**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3051, 6020, 747A, 7474, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

*Air & Emissions* (EPA TO-15.)

#### **Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl.



## **APPENDIX C: DATA VALIDATION SUMMARIES**

## PEABODY TERRACE - PROJECT SUMMARY

**Analytics Environmental Laboratory Job Numbers: 67904 & 68251**

**A modified Tier II validation was performed on the data. The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.**

Samples were received at 4 degrees Celsius. No qualifications will be applied.

### PCBs:

All polychlorinated biphenyl compound (PCB) samples were extracted and analyzed within technical holding times. No qualifications will be applied.

All PCB surrogates met acceptance criteria or were diluted out with the following exceptions. The recoveries for decachlorobiphenyl (DCB) in sample PTY-CBK-241604-0812 (67904-8) were not calculated due to matrix interference. No qualifications will be applied.

The PCB method blanks were non-detect (ND) for all target analytes. No qualifications will be applied.

PCB field blank samples PTF-CBCQ-24517-0843 (67904-35) and PTF-CWKQ-24517-0844 (67904-36) were ND for all target analytes. No qualifications will be applied.

The PCB matrix spike/matrix spike duplicate (MS/MSD) performed on samples PTY-CBK-241604-0812 (67904-8) and PTF-CBK-24517-0834 (67904-27) were not analyzed due to the high concentrations of PCB-1254 present in the samples. No qualifications will be applied.

The PCB laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) met acceptance criteria. No qualifications will be applied.

PCB field duplicate samples PTF-CWK-24517-0828 (67904-21)/PTF-CWKD-24517-0838 (67904-31), PTF-CBK-24517-0831 (67904-24)/PTF-CBKD-24517-0832 (67904-25), and PTF-CBC-24517-0835 (67904-28)/PTF-CBCD-24517-0836 (67904-29) met acceptance criteria with the following exception. PCB-1254 was not detected in sample PTF-CWK-24517-0828 (67904-21), but was detected at greater than two times the reporting limit in sample PTF-CWKD-24517-0838 (67904-31). The detected and non-detected PCB-1254 results were estimated (J, UJ) in samples PTF-CWK-24517-0828 (67904-21) and PTF-CWKD-24517-0838 (67904-31) due to poor field duplicate precision.

The relative percent difference (RPD) between the column results for all detected PCBs met acceptance criteria ( $\leq 25\%$ ) with the following exceptions:

LAB ID	SAMPLE ID	PCB	RPD	QUALIFIER
67904-23	PTF-CBK-24517-0830	1254	32.4	J
67904-24	PTF-CBK-24517-0831	1254	37.0	J
67904-25	PTF-CBKD-24517-0832	1254	27.9	J
67904-27	PTF-CBK-24517-0834	1254	35.5	J
67904-31	PTF-CWKD-24517-0838	1254	39.2	J

Some samples were analyzed at dilutions due to the high concentration of PCBs present in the samples and/or due to sample matrix. Elevated quantitation limits are reported in these samples as a result of the dilutions performed.

Data Check, Inc.  
P.O. Box 29  
81 Meaderboro Road  
New Durham, NH 03855

Gloria J. Switalski:  
President



Date:

1/10/2011

## PEABODY TERRACE - PROJECT SUMMARY

**Analytics Environmental Laboratory Job Number: 67921**

**A modified Tier II validation was performed on the data. The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.**

Samples were received at 4 degrees Celsius. No qualifications will be applied.

### **PCBs:**

All polychlorinated biphenyl compound (PCB) samples were extracted and analyzed within technical holding times. No qualifications will be applied.

All PCB surrogates met acceptance criteria or were diluted out. No qualifications will be applied.

The PCB method blanks were non-detect (ND) for all target analytes. No qualifications will be applied.

No PCB field blank sample was submitted with this analytical package. No qualifications will be applied.

No PCB matrix spike/matrix spike duplicate (MS/MSD) was performed on a sample from this analytical package. No qualifications will be applied.

The PCB laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) met acceptance criteria. No qualifications will be applied.

No PCB field duplicate samples were submitted with this analytical package. No qualifications will be applied.

The relative percent difference (RPD) between the column results for all detected PCBs met acceptance criteria. No qualifications will be applied.

One sample was analyzed at a dilution due to the high concentration of PCBs present in the sample and/or due to sample matrix. Elevated quantitation limits are reported in this sample as a result of the dilution performed.

Data Check, Inc.  
P.O. Box 29  
81 Meaderboro Road  
New Durham, NH 03855

Gloria J. Switalski:  
President



Date:

11/5/2010



## PEABODY TERRACE - PROJECT SUMMARY

Alpha Analytical Job Numbers: L1001663, L1004342, L1016678, & L1015311

A modified Tier II validation was performed on the data. The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.

Samples were received at 1, 1.2, and 5 degrees Celsius. No qualifications will be applied.

### PCBs:

All polychlorinated biphenyl compound (PCB) homolog samples were extracted and analyzed within technical holding times. No qualifications will be applied.

All PCB homolog surrogates met laboratory acceptance criteria (50%-125%) with the following exceptions:

LAB ID	FIELD ID	SURROGATE	% RECOVERY	QUALIFIER
L1001663-05	PTA-CAR-2012-0374	Cl3-BZ#19-C13	148	J, detected results
		Cl8-BZ#202-C13	179	

The PCB homolog method blanks were non-detect (ND) for all target analytes. No qualifications will be applied.

No PCB homolog field blank samples were submitted with these analytical packages. No qualifications will be applied.

No PCB homolog matrix spike/matrix spike duplicate (MS/MSD) were performed on a sample from these analytical packages. No qualifications will be applied.

The PCB homolog laboratory control sample (LCS) associated with analytical package L1015311 met laboratory acceptance criteria (40%-140%) with the exception of one or more mono, di, tetra, or pentachlorobiphenyl homologs. No qualifications were applied to the mono or dichlorobiphenyl homologs since the LCS recoveries were above acceptance limits and the associated samples were non-detect for these homologs. The detected tetra and pentachlorobiphenyl homologs and total homologs will be estimated (J) in all samples in analytical package L1015311 due to high LCS recoveries.

No PCB homolog field duplicate samples were submitted with these analytical packages. No qualifications will be applied.

Some samples were analyzed at dilutions due to the high concentration of PCB homologs present in the samples and/or due to sample matrix. Elevated quantitation limits are reported in these samples as a result of the dilutions performed.

Data Check, Inc.  
P.O. Box 29  
81 Meaderboro Road  
New Durham, NH 03855

Gloria J. Switalski:  
President



Date: 4/10/2011